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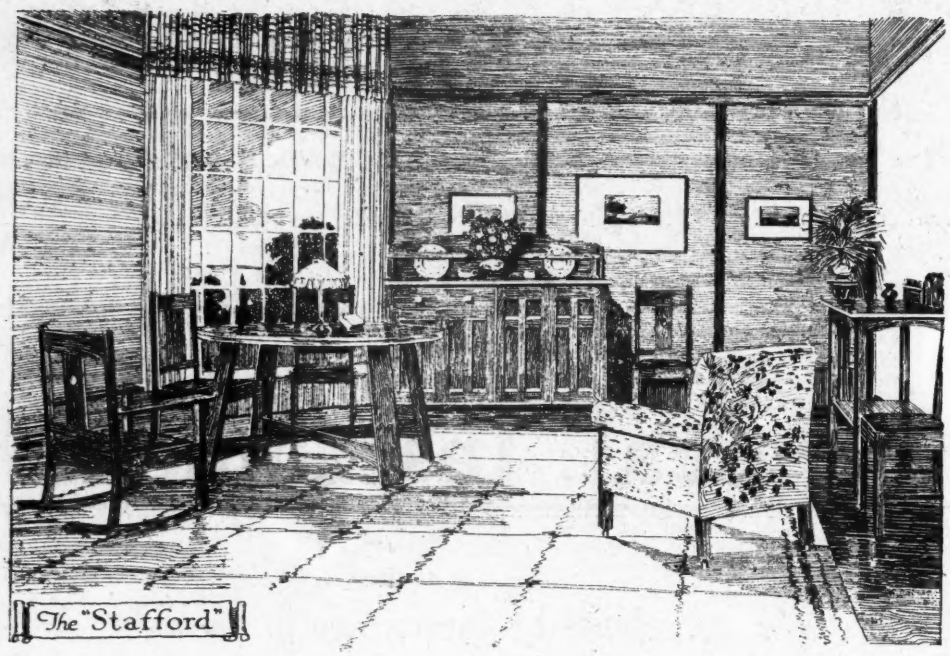

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Presidential Address.

SECTION OF MEDICINE, AUSTRALASIAN MEDICAL CONGRESS, BRISBANE, 1920.

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Honorary Physician, Melbourne Hospital; Honorary Consulting Physician, Children's Hospital, Melbourne.

THE PRESENT PROBLEMS OF VISCERAL SYPHILIS.

I feel no apology is needed for choosing the "Problems of Visceral Syphilis" as the subject of my address to this Section of Medicine at this Congress, for the subject is one of great practical importance in medicine and is one in which much work has been done and much progress has been made in these last ten years. Though good advance has been made, we have still far to go before we reach certainty in diagnosis or complete efficiency in treatment, so that it has seemed to me it might be helpful, on such an occasion as this, to review our position, to know where we stand and to stand together, helping each other.

Introduction.

As an introduction to this address, I desire to make somewhat of a personal explanation. Twelve years ago, at the Congress held in Melbourne, the subject of syphilis was discussed in all Sections and in full Congress. In those days, the diagnosis of chronic syphilis during life rested very insecurely on the personal history of the patient and much less insecurely on the recognition of certain more or less gross bodily changes, such as aneurysm, palpable or visible gummatous masses and certain neurological diseases. Until the last ten years the chief evidence of chronic visceral syphilis was obtained, not during life, as a rule, but from observations made during the *post mortem* examination of cases and from the occasional microscopic examination of portions of tissue surgically removed during the life of the patient. As the result of these examinations, Professor Sir Harry Allen had over thirty years ago come to definite conclusions as to the signs of visceral syphilis; at that time he stood almost alone in the position he had taken up, but further time and further tests have shown that he was extraordinarily right and he is to be ranked as an accurate and original observer, a logical thinker and a great leader of medical thought.

It gives me here in Congress, and now as President of this Section, something a great deal deeper than great pleasure to express myself in this way about my teacher and my friend, Sir Harry Allen, because I was one of his pupils who for a period of years after graduating wavered in accepting fully and in its right significance his teaching. Thirty years ago I went to England and Germany to do post-graduate work; to my amazement, I found that appearances in the largest and smallest vessels and appearances in the viscera, which Professor Allen had taught as suggestive or indicative of syphilis, were not so regarded by the younger graduates or their teachers in Europe. For instance, all the slighter changes in the aorta, at all ages, from youth to senility, were regarded as atheroma, due to some unknown causes, labelled "strain" and "toxæmia"; further, chronic fine fibrosis of viscera was regarded as due to some inflammation, non-syphilitic, for it was held that a gumma mass, not a fine fibrosis, was the sign, the only sign, of syphilis in a viscus. At that time the realm of bacteriology in its relation to disease was being explored from day to day and it was natural, perhaps, that I accepted the views of my post-graduate colleagues and teachers in Europe in 1890 that there was, other than a gumma, nothing in morbid anatomy or histology distinctively diagnostic of syphilitic inflammataion as opposed to any other chronic inflammation.

For the last twelve years I have been steadily returning to the position which Professor Allen has held for so many years and with the support of the serological or Wassermann test and with the proof of the presence of the spironema in suspected or definitely characteristic syphilitic tissue, it seems to me proved that Professor Allen is and always has been right in his main contention and in his teaching.

Within the last two years there has appeared some remarkably good work done by Professor Warthin, of Ann Arbor, showing the actual presence of spironema in tissues of various viscera affected with chronic syphilis of a non-gummatous type and this work has been summarized by him in a most informative article entitled "The New Pathology of Syphilis." Except for the recognition and the remarkable demonstration of the spironema in the tissues, every general statement made in Professor Warthin's paper was made and taught by Professor Allen over thirty years ago.

After that introduction and explanation, I would propose to consider in this address methods of clinical and laboratory investigation which we can at the present time adopt to help us to determine the presence of syphilis in individual cases. I do not propose to consider the prevalence of chronic syphilis and I would propose to deal not at all with statistics.

The Diagnosis of Syphilis.

You will recognize that the diagnosis of chronic syphilis, *post mortem* and occasionally *ante mortem*, rests on one or two of three supports: (*i.*) the Wassermann test, (*ii.*) histological changes in vessels and viscera, (*iii.*) the presence of the spironema in the human tissue. Of the latter method, I have personally seen only an occasional specimen, but Dr. Webster, of the Children's Hospital, Melbourne, is, I understand, as part of practical *post mortem* work, undertaking a systematic investigation into the presence of the spironema in the viscera of patients suspected to have suffered from congenital syphilis. Apart from *post mortem* diagnosis, you will realize that during the life of the patient the diagnosis of chronic syphilis also rests on one or two of three supports which may be well or badly balanced, according to circumstances. The first support is again the Was-

sermann test, the second, clinical observation and clinical knowledge and the third, the very unreliable support of the "history" of the patient.

The Wassermann Test.

You will see that the chief practical factor in diagnosis of chronic syphilis, both during life and immediately after death, may be said to be a positive Wassermann reaction; I would at once place before you my experience of the discrepancies which in the past, in the immediate past and even now may be thought to lessen and do lessen the value of this test. I may frankly state up and down these ten years I have occasionally received the report of a "negative reaction" when I was positively certain that the patient had chronic progressive syphilis. I have never received a report of a positive reaction when I had reason to believe that there was no probability of congenital or acquired syphilis; this, however, cannot be regarded as very significant, for until recently, both in my hospital and private practice, only cases reasonably suspected of being syphilitic were subjected to a Wassermann test, but I have received from one and the same case, almost at the same time, varying results as to the Wassermann reaction; for instance, a "slow negative reaction," given in Melbourne, and a "positive reaction" reported from Sydney five days later. I have received in a certain limited number of chronic cases apparently satisfactory reports, indicating, while the cases were under treatment, a gradual change in the serum reaction, from positive to negative; and I have received most bewildering reports, in which negative and positive results from the same case, during progress of treatment, might be described as having occurred in apparently a haphazard manner. I am fully acquainted with all the adverse criticisms on the reliability of the Wassermann test, indeed, I have indulged in some myself; but I would point out, in order to understand the significance of these criticisms, we must, as clinicians, be fully acquainted with the details and meanings and difficulties of the Wassermann test. We should not "send up blood to the laboratory" like a devout Moslem "sends up a prayer" to Allah; in that way may disbelief come. We must realize that during the last year or two great improvements have been made in the technique and in the avoidance of fallacies in the test, both as to delicacy in obtaining a true positive reaction and greater certainty in avoiding the indication of a "false positive" instead of a "true negative reaction." In each step of the test there must be systematic control tests. Into the details I cannot enter now, but I would suggest to you that the recognition of the ice-box method seems to be an advance in the right direction in delicacy of a positive reaction; the recognition that the serum of non-syphilitics may be anti-complementary has lead to a retreat from a dangerous position. In all advance in knowledge we "must part with much of what we know," as Sir Thomas Browne said some centuries ago, or in modern phraseology, we have to "scrap" our knowledge in order that we may progress unhampered by definite but misleading experience. I feel, indeed I hope, that I shall have to "scrap" some of my own experience as regards the Wassermann test, for I had got into the position of feeling that a positive Wassermann reaction confirmed my clinical opinion, which was very satisfactory to me, while I ignored a "negative reaction," if it was opposed to my strong clinical impression, which was very unsatisfactory to the other doctor who consulted me about the patient.

We should look forward to the Wassermann reaction as becoming always a reliable indication, not sometimes an indication and sometimes a confirmatory test and sometimes to be ignored. I am specially looking forward to the results of a special course of Wassermann test investigations, which are being carried out by Dr. Hamilton Fairley at the Walter and Eliza Hall Institute in connexion with all the clinical work and *post mortem* work at the Melbourne Hospital, but these investigations take a long time and we shall have to wait long for positive results. Even with all its imperfections, both now and in the past, I feel perfectly certain that the Wassermann type of test is of surpassing value. Let us recognize as in all other forms of activities in medicine and science, that progress and improvement will occur, but gradually and with difficulty.

Before leaving this review and appreciation of the Wassermann test, there remain two points to which I would desire to refer. I must give them to you in the form of questions. First, in chronic syphilis, where the reaction may be much less marked than in acute syphilis, do anti-syphilitic drugs or other drugs interfere, as it were, with the Wassermann test? Second, is the provocative dose of salvarsan of any real value in chronic syphilis, or are the natural variations of the tissue fluid change of the disease sufficient to give varying degrees of reaction?

As a partial answer to the first question, I have found that in certain cases of chronic syphilis, if a positive reaction is obtained at the first investigation, then no matter what we have done or what we are doing, it is difficult to transform it into a "negative," but there are a certain number of cases that give varying results and some of these negative results are, I think, as others have found, due to the fact that comparatively small amounts of alcohol will render a strong reaction negative, thus producing an erroneous impression regarding treatment or the presence of the disease. As a partial answer to the second question, I agree with those who regard the so-called provocative reaction as unsatisfactory and inconclusive, both as to diagnosis and prognosis, in chronic syphilis (I cannot say anything about acute syphilis). I am now again investigating a series of strongly suspected cases of quiescent visceral syphilis, where only a "negative reaction" has been obtained and may modify this opinion somewhat.

Passing on from the review of the Wassermann test, let me proceed to consider some more purely clinical problems, in connexion with visceral syphilis.

Clinical Problems.

I would suggest to you that in the past the superficial dermatological manifestations of syphilis dominated too much the clinical conception of the disease.

The course of the disease was clinically divided into three periods, as indicated by the occurrence of the most obvious but the least serious signs, the chancre, the cutaneous rash and the external gumma. It is proved that by the time the primary sore shows itself, the disease has already become a generalized infection. The chancre developes at the point of entry of the virus and is the manifestation of the earliest cell irritation, but it is not the focus or the "culture bed" from which spironemata are disseminated; the chancre is an incident in the incubation period of the disease and may be regarded not as the primary sore, but rather as the first of the cutaneous sores of syphilis; its great clinical interest is its danger signal significance.

Instead of dividing clinical syphilis into primary, secondary and tertiary and other stages, I believe the most helpful classification of syphilis is into "acute" and "chronic." Any more elaborate divisions are really unhelpful distinctions, without any real essential difference. I dislike the term "latent" syphilis. It leads one from trying to recognize the subtle progressive nature of chronic syphilis. Hazen has suggested the term "endo-syphilis" as the label for the condition of chronic visceral syphilis, but I see no special advantage in that term.

The classification into "acute" and "chronic" does indicate a real difference in the course and character of the disease; in chronic syphilis the virulence of infectivity may be said to have subsided but not to have disappeared, its transmissibility has lessened, but is not absent. I cannot help believing that the mode of transmissibility has altered in many cases from the usual abrasion inoculation to one of seminal fluid infection. Into this question I cannot enter now, nor have I time to discuss the problem of inherited or congenital syphilis; but I find myself in agreement with those who ask, if syphilis can only be transmitted the one way by abrasion inoculation, why is syphilis in a previously healthy married woman, recently infected by her husband, so different from the ordinary type of the disease, so signless that it is unrecognizable? Clinical experience abundantly confirms Colles's law, but the mother, signless of syphilis at the time of her confinement, gives a positive Wassermann reaction even then and may, as many cases I know of, develope signs of chronic visceral syphilis later. This alteration in the type of the disease may be due to just a diminished virulence of the spironema. I do not think that is the sole factor, but if it is, the problem of diminished virulence should be clearly understood. I would ask, in considering the subject of diminished virulence of infectivity, do you imagine that after the initial acute blood infection the spironemata ever become generalized again, or do they not rather "rest" encapsuled and embedded in the invaded tissue, like tubercle bacilli, reaching other parts by local extension rather than by generalized blood infection? Further, in consideration of the problems of chronic syphilis, if spironemal virulence in the late stage is slight, why is chronic syphilis often so severe? Why does general paralysis of the insane emerge during the so-called latent period of the disease? Why do the greatest lesions—gummata especially—appear at that stage? Very shortly answered, these gross changes are not due to recurrence of acuteness of virulence, but are due to the development of acute sensitiveness of cells to the virus of syphilis. It is reasonable to conceive that during the incubation and early stage of the disease, there is not only a tissue fluid reaction (the Wassermann body), there is also a fixed tissue cell reaction; this tissue cell reaction goes on increasing until there is a hypersensitive cell reaction to the offensive thing, so that masses of cells crowd round the spironemata, as a counter-offensive. The first of these masses is the chancre and the last of these masses is the gumma. Before hypersensitiveness has developed, the presence of numerous virulent spironemata may result in the formation of a small chancre; in the same patient, much later, the presence of scanty, feebly virulent spironemata may result in the formation of a large gumma. Apart, however, from the reaction or hypersensitiveness of the fixed or interstitial connective tissue cells, there is a similar hypersensitiveness of the parenchyma cells of the various viscera, but hypersensitiveness of the delicate, highly specialized cells, say, of liver, of heart muscle or of brain, does not produce a reaction in the cells, but a collapse of the cells; the cells are rapidly spoiled, degenerate and cannot be replaced. Acute yellow atrophy of liver cells occasionally does take place in acute syphilis, if the virulence is very great; atrophy of myocardial cells is comparatively common in chronic syphilis and degeneration of the parenchyma cells of the brain is the basis of the general paralysis of the insane.

Visceral Changes.

But I must leave these regions of speculation and come down to actual facts and structural changes. If we are to get into touch with interstitial fibrosis, syphilitic arteritis and syphilitic degeneration, if we are to visualize some of the points of the problems of neuro-syphilis, I must do some spade work in the shape of showing you lantern slide illustrations of syphilitic processes. In this way I may partly clear the ground of all obstructions and misunderstanding concerning changes, which we can see together.

Twenty-five lantern slides were shown and demonstrated:

(1) To illustrate the interstitial and parenchymatous changes of chronic syphilis in various viscera, in the pancreas and in the liver.

(2) To illustrate syphilitic changes in the smaller arteries of organs.

(3) To illustrate by means of diagrammatic drawings the "interstitial" or "parenchymatous" tissues of the brain and the nature and suggested function of the choroid plexus and to illustrate by means of McIntosh and Fildes's remarkable diagrams the nature of "interstitial or meningo-vascular encephalitis" and parenchymatous encephalitis, the basis of general paralysis of the insane.

(4) To illustrate microscopical changes in syphilitic myocarditis; some of these illustrations were taken from Professor Warthen's wonderful work.

(5) To illustrate by means of special photographs and special drawings, made by Mr. Daryl Lindsay, of specimens in the Pathological Museum (Melbourne) and in the Melbourne Hospital, all the macroscopical changes in the aorta and about the aortic valves, both syphilitic and non-syphilitic.

That ends the spade work. I hope I have cleared the ground, so that you can see what is taking place in visceral syphilis.

Clinical Manifestations.

I will proceed to consider some clinical manifestations and the clinical diagnosis of some forms of visceral syphilis.

With the illustrations of syphilitic cardio-vascular changes in your mind and almost before your eyes, I would review shortly, very shortly, the clinical manifestations of syphilitic disease of heart and arteries. It seems to me that such clinical investigation must always be necessary and very complete, whatever degree of reliance we come to place upon the Wassermann test, though a positive result in this test indicates that the patient has syphilis, it does not indicate that the lesion under examination is syphilitic, for chronic syphilis, far from making a patient immune to other illnesses, may be said to pre-dispose him to other infections and other causes of ill-health.

First as regards the heart; broadly speaking, all manifestation of progressive myocardial weakness, apart from rheumatism, apart from acute infections and apart from chronic sepsis, ought to make us suspect syphilis in the patient of any age, except advanced years. Anginal pains, breathlessness on slight exertion, aortic valvular disease, auricular fibrillation even and especially when it occurs temporarily apart from an acute illness, cases of extra systole, with or without other evidence of myocardial weakness and, of course, the rare cases of heart block, all should lead us to investigations of persisting chronic syphilis, which means the Wassermann test, repeated, if necessary, and a most searching clinical examination of the whole body, especially of the nervous system and the eyes and, last of all and least important of all, the personal and family history may be investigated. It must always be remembered that the ordinary even truthful patient looks upon syphilis entirely as a skin disease; if there has been no skin disease; there has been no syphilis, so the patient hopes and thinks.

As regard syphilitic disease of the aorta, the commonest manifestation is a slight aortitis. How is this to be recognized? In many, perhaps in most cases, it cannot be recognized until it is not slight and then it is too late for effective treatment.

A slightly dilated thickened aorta may be felt in the supra-sternal notch, but a normal aorta in a short, stout patient or an aorta in a tall, thin, nervous, excitable and thyro-toxic patient, or the aorta associated with high blood pressure, may each be palpated in the supra-sternal notch and yet none of these indicate syphilitic aortitis. In a typical case of syphilitic aortitis, there is a low blood pressure and not a hurried heart. The majority of the cases of aneurysm which I have investigated, were associated with a low blood pressure, which amazed me some seventeen years ago when I first detected it. In syphilitic disease of aorta and arteries I have seen every degree of blood pressure, ranging from low to high. Syphilis does not necessarily prevent the production of high blood pressure, whatever the causes of that condition may be, but syphilis is not the cause of arterio-sclerosis, as I contended at the last Sydney Congress. Aneurysmal dilatation of the ascending portion of the arch of the aorta need not necessarily be syphilitic in a patient of advanced years, as I have already shown you. The X-ray examination is absolutely diagnostic of a certain type and degree of aneurysm and may be very helpful in all aorta investigations, but the interpretation of the shadows requires special clinical knowledge and level headedness. Of syphilis of small peripheral arteries, with its type of endarteritis, I have seen most typical cases of Raynaud's disease proved to be syphilitic and respond to anti-syphilitic remedies. I do not say for a moment that Raynaud's disease is syphilitic, but I do say that I cannot clinically distinguish between the two types without the Wassermann test, except that in the syphilitic form a great tendency to dry gangrene has shown itself in the extreme points of fingers and of ears. The most important area of the body affected with syphilitic endarteritis is, of course, the brain and the spinal cord. The occurrence of a vascular lesion of the brain in a young or middle aged man, apart from an acute infection and apart from high blood pressure and even with high blood pressure, is practically always an indication of syphilis; the same is true of the spinal cord, though it is not so common. But syphilitic endarteritis of cerebral or spinal vessels is a pan-arteritis and is always associated with some meningeal involvement, forming the basis of meningo-vascular or interstitial encephalitis. Apart from vascular lesions, all degrees and extent of chronic syphilitic meningitis of the cord and brain must be recognized as common, though a gross gumma, such as is seen in pathological museums, is very uncommon. The commonly occurring meningo-vascular change is so fine that it is difficult to demonstrate it to a class at the autopsy; it lends itself to microscopical rather than to macroscopical examination.

Passing on now to the consideration of an important point of differential diagnosis, how are we to differentiate between parenchymatous encephalitis and interstitial encephalitis? How are we, in the early stage to distinguish between general paralysis of the insane and interstitial encephalitis with cerebral symptoms? Frankly, I do not think we can make a differential diagnosis between these two diseases in an early stage, even by the most complete examination and investigation, for the Wassermann reaction is the same in both, the cerebro-spinal fluid shows the same abnormalities in both, while the clinical examination is not conclusive and, as a matter of fact, "parenchymatous" encephalitis, that is, general paralysis of the insane, is always associated with some interstitial inflammation of the meninges. The only method by which we can at present reach a certain measure of reliability in our diagnosis, is by observation of the progress of the case in response to treatment. General paralysis of the insane progresses downwards, in spite of intense treatment, broken only by its own curious remissions; meningeal syphilis improves and may be entirely cured; vascular lesion of the brain may perhaps be prevented from getting worse by treatment. The same view may be taken of neurone degeneration, "parenchymatous" syphilis of the cord and "interstitial" or meningo-vascular syphilis of the spinal cord.

Why should one man develope parenchymatous disease of the brain and another man infected in the

same way and with the same kind of virus, remain free? Again, why should women be less liable than men to this particular form of the disease? Is there a special strain of spironema which is specially "neurotropic," having a special affinity for nerve cells? There is a good deal of experimental work to support such a view. Or is the "soil" infected a greater factor than the infecting seed? Dr. Madden, of Cairo, and my friend, Dr. McLaren, of Korea, both have pointed out that in those countries, although there is a very virulent form of syphilis, with much gummatous formation in the late stages, there is neither locomotor ataxia nor general paralysis of the insane. I am inclined to think that both factors have their influence, a non-resistant soil and a special strain of the spironema.

Before I leave the subject of cerebro-spinal syphilis, I would suggest to you that many cases classed as neurasthenia, with vague headache and great fatiguability, occurring in middle aged men and women, are associated with syphilis, give a positive reaction to the Wassermann test (here at its point of greatest clinical value as an indicator) and that these cases respond, as does the anæmia present, to anti-syphilitic drugs. I would point out that many cases of spondylitis, confirmed by skiagram, and especially spondylitis of the cervical vertebræ with pain in the back of the neck and with persisting, perhaps unilateral, backache, give a positive Wassermann reaction.

Difficult as may be the accurate diagnosis of syphilitic disease of heart, of vessels, or of the cerebro-spinal organs, greater difficulties beset us in the diagnosis of chronic syphilis of other viscera. Who can diagnose early or slight cirrhosis of the liver? Who can diagnose a slight degree of pancreatitis, or for the matter of that, a gross degree of pancreatitis? Although in this connexion I must report that I have frequently found diabetes in young adolescents and in patients of all ages, to be associated with a positive Wassermann reaction.

I must pass over the consideration of chronic syphilis of all the other organs, so that I may present to you a few impressions on the treatment of visceral syphilis.

Treatment.

Speaking broadly, treatment of chronic syphilis must be continuous and varied, ranging from carefully planned, intense intravenous salvarsan treatment, with possibly and probably other forms of salvarsan administration, to mercury in many forms and the free use of full doses of iodide given by the mouth.

Let me take the simplest point first. Iodide is not to be regarded as anti-syphilitic; it may be described as cytolytic; it brings about the breaking down of poorly organized cells, but it does not bring about the breaking down of the spironemata. It acts, quite probably, in chemically antagonizing the anti-enzyme present, thus allowing the normal enzyme and cell-destructive agency to proceed. Whatever is the chemistry of its action, iodide is an extraordinary valuable preliminary treatment in these cases. It should be given in large doses, distributed as evenly as may be over the 24 hours, for it is rapidly excreted by the kidney.

The problem in the treatment of chronic syphilis is not only the administration of the most active anti-syphilitic remedies; it is the accessibility of the spironemata in the affected tissues to these remedies. Even in ordinary viscera, the spironemata may be regarded as scanty in numbers, but resistant and inaccessible, because deeply entrenched, having "dug themselves in" and the trenches have to be taken before the spironemata can be killed; in the walls of the aorta and in the substance of the brain, however, such anti-syphilitic substance as arsenic cannot be found to be present, even when given in full poisonous intravenous doses; the trenches are themselves inaccessible and impregnable in these positions. What is true of arsenic is probably true of mercury and, it is interesting to note, is apparently true of lead, for, as Oliver long ago pointed out, in fatal cases of lead encephalopathy lead is not found in the brain substance.

As a matter of medical practice, unless there is most obvious gross renal insufficiency—a very difficult matter to judge—I advise the use of mercury and salvarsan, recently chiefly in the form of the preparation of neo-salvarsan, although I think the original salvarsan to be the most potent of all our remedies.

In cases of myocardial disease, in cases where there is albuminuria, in elderly feeble patients with definite meningo-vascular syphilis, I generally test the effect of arsenic by a short series of preliminary injections of cacodylate of soda and recently, because of its success in this form of administration in the treatment of pernicious anæmia, I give a few intra-rectal injections of neo-salvarsan in saline solution. If, after this treatment, there has been no suspicion of skin eruption and no toxic symptoms, I advise a carefully graduated course of intravenous injections of some form of salvarsan. I have seen no deaths from salvarsan in these types of cases, but I have seen a patient with interstitial cerebro-spinal syphilis become comatose for a couple of days after two injections of neo-salvarsan and I have seen several so-called "nitroid" attacks after the third or fourth injection.

In actual practice, I advise first a course of iodide for intense effect for a limited time; mercury should be given concurrently, in any form, according to circumstances, and must be continued for long periods. Then I advise that a course of four or six injections of salvarsan should be given at weekly intervals and later some combination of arsenic iodide and mercury, such as "hydrarsan," should be given continuously by the mouth for prolonged periods.

Something that is always in the tissue fluids of the body, acting as a small "patrol," constantly "on duty" and on the alert, as it were, to arrest any accessible spironema, is the desirable plan of treatment in visceral syphilis. I am doubtful whether in the future intensity of treatment will be adopted in chronic syphilis, any more than one complete "sterilizing" dose is adopted now in the treatment of acute syphilis. The continuous administration of some drugs that will penetrate fine fibrous tissue and that will penetrate the walls of the aorta, some drug that will be neurotropic to a non-toxic degree, that

is the essential point to be decided in the future for effective treatment of this disease.

I am not impressed with any form of intrathecal lumbar puncture injection in cerebro-spinal syphilis. I have seven or eight years ago seen remarkable improvement associated with the use of salvarsanized serum, but I soon began to doubt whether the improvement was not due to the salvarsan given intravenously and not to the infinitesimal amount of salvarsan in the serum given intrathecally.

Let me put certain facts before you and certain experimental findings, for the intrathecal method has some reasonableness for its use. In healthy laboratory animals, arsenic is apparently not found in the cerebro-spinal fluid when salvarsan is given intravenously and as cerebro-spinal fluid is broadly regarded as, probably, the lymph of brain, it was reasonable to introduce salvarsan into the sub-arachnoid space; but it has been shown frequently and conclusively that in cases of cerebro-spinal syphilis, the cerebro-spinal fluid does contain a reasonable amount of arsenic when salvarsan is given intravenously. The condition in unhealthy human beings is therefore different from the condition in healthy laboratory animals; barriers have been broken down.

Nothing much is gained by taking salvarsan out of the blood vessels and putting into the cerebro-spinal fluid, when it is there already; certainly nothing is to be gained, unless we can get evidence that salvarsan or its derivatives pass out of the cerebro-spinal fluid into the brain or cord substance and we have absolutely no suggestion of that proof. Drugs, if introduced into the subarachnoid space in non-toxic amounts pass out by the veins and sinuses into the general circulation. Much work has to be done on the penetrability of drugs into brain substance and it is clear that a special degree and type of solubility is required before penetration can occur. This type and degree of solubility has apparently not yet been reached in any arsenic compound employed at present. Salvarsan will bring about improvement and local cure in meningo-vascular syphilis of the brain, carried as it is in the ordinary vessels of the systemic circulation and as it is carried to any other viscus, but it does not penetrate into the cerebral substance, no matter how it is introduced therapeutically.

Apart from the ineffectiveness of present treatment of "parenchymatous" syphilis of the brain, what measure of effectiveness follows treatment of chronic syphilis of other viscera? Some improvement, sometimes marked improvement, follows well-balanced treatment, but I am doubtful if a case of chronic syphilis can be really cured. The condition can be controlled unquestionably and kept under control and with that we must be content at present. I would venture to emphasize the point, however, that whatever our limitations are, we must continue to do the best we can, with the material at our disposal, keeping ourselves alert and understanding. To do nothing, because we cannot do everything, is more than a mistake in medical practice; it is what Browning calls "the sin of the unlit lamp and the ungirt loin."

In conclusion, I may say that I think within the next years may come a great advance in all our methods of dealing with syphilis. Knowledge does not stand still and much of what I have suggested to you to-day cannot be entirely true and some of it may be quite wrong, but I have endeavoured to be definite and every teacher will agree with Bacon "that truth is more likely to come out of error, if that is clear and definite, than out of confusion."

SUPPURATIVE MIDDLE EAR.[1]

By Frank Andrew, M.D., Ch.B. (Melb.),
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I have confined this paper to the indications for treatment and the actual manœuvres used in our clinic.

Indications for Operation.

It is likely that all clinics are in these days so undermanned that the greater number of suppurative middle ears submitted to major operation are of a class whose urgency more or less compels this attention. There is neither operative nor after-treatment time available to induce one to operate on ears whose chance of recovery on conservative lines is appreciable.

Group *A*.—Those ears with manifest signs of commencing invasion of labyrinth or Fallopian aqueduct.

Group *B*.—Those chronic purulent ears, which have become complicated by gross mastoid signs or symptoms.

Group *C*.—Patients in whom only one ear is involved and whose conditions of life make any adequate after care of an operated ear, once discharged from the clinic, impossible.

Group *D*.—Cases of gross cholesteatoma.

Group *E*.—Those with hearing for conversational voice under 15 cm. the deafness being of a type offering no prospect of improvement.

Group *F*.—Cases already operated, perhaps many times, with failure to cure.

I take it that the necessity or advisability of the formal radical operation for these will not be debated, except for those whose general bodily state precludes other than temporizing treatment; the room for debate lies only in the technique of the operation and after treatment. This leaves those groups of various grades of chronicity of suppurative middle ear disease about whose handling we have the widest diversity of opinion. My own feelings about them are that our treatment must be decided, as all treatment should, by our conception of the exact pathology of the case. An operation must often be planned up to a certain stage with a view to settling the pathology, after which point it can be finished along lines more or less radical.

I would arrange them in two main sub-classes, in which ossicular chain is (1) unbroken, (2) broken.

(1) In this class are:

(*a*) Cases in which the perforation is anterior or antero-inferior; almost all treatment is directed to clearing post-nasal adenoids, Rosenmüller's fossa adhesions, infected nasal sinuses, or enlarged posterior

[1] Being a paper read at the Congress on Diseases of the Eye, Ear, Nose and Throat at Melbourne in November, 1918.

ends of the inferior turbinates, to removing Eustachian strictures or septic tonsils. We wash the anterior and hypo-tympanum with silver solutions from below up through the Eustachian catheter, destroy visible granulations with chromic or trichloracetic acid or silver nitrate. These measures, backed by a toilet from which all syringing is excluded and alcohol freely used locally, usually result in a dry ear. If they fail in cases where the perforation is so large as to preclude hope of healing or where invasion of the annulus precludes any chance of sound union, or, having succeeded, prompt relapse occur with cold, Yankauer's method of closure of the Eustachian from above or Beck's from below, or a combination of the two, which I sometimes practise, will seal off the source of reinfection by ending "the blowing of the nose into the ear." Where the hope of closure is not unreasonable we add repeated trichloracetic acid paintings of the perforation edge and sometimes the sealing of a rubber membrane over the perforation often with success.

(*b*) Where the perforation is posterior, we have to consider, in addition to tubal factors, two important unknowns, the attic, the mastoid antrum and cells.

Our means of non-operative investigation are extremely limited and unreliable. The probe has a limited range and its negative evidence is valueless. The Hartmann syringe, unless it bring away cholesteatomatous masses, can give no decided answer. X-rays tell us nothing of attic change and are rarely decisive as regards the mastoid state. The presence of polypi springing from the usual site on the incus or the neighbourhood of the aditus is not proof of the hopelessness of recovery with ordinary local treatment. When this has failed, our decision must be made on lines to be shortly discussed.

(*c*) When the perforation involves Shrapnell's membrane alone or encroaches on the lucida as well.

Here we have indisputable evidence of attic involvement. Where the perforation corresponds with and is limited to the outer wall of Prussac's space, it may accompany a simple and easily resolved inflammation involving no other structures and is one of the common types of "sea bathing otitis." But when the Shrapnell perforation is extensive, the discharge purulent and perhaps evidence of retention obvious, we have a gross attic suppuration almost invariably, where no prompt recovery ensues, maintained by antral suppuration, in addition to the exceedingly poor drainage afforded by outer partition of the attic, while the bodies of the incus and malleus remain *in situ*. In all but the earliest cases there may be as well local caries of the bodies of the incus and malleus, very inaccessible to local treatment, while the outer attic wall remains. In these cases we must operate and operate early to save our ossicular chain, or, in other words, to save hearing.

(2) The ossicular chain is broken.

I would include in this group cases in which the chain is apparently intact, but destruction of the lucida is so enormous or the remains of the lucida so bound to the inner tympanic wall as to preclude hope of repair. Very few patients of this type need operation; they have, as a rule, scanty, almost mucous, discharge, but should their mastoid or attic state demand drainage, a radical operation should be done, as there is no effective middle ear apparatus to save. Let me briefly dispose of group (2). The typical radical is the only operative procedure which will with any certainty cure dangerous conditions in mastoid cells, antrum and attic and permanently end discharge. Elaborate procedures designed to save functionless ossicles waste time and seriously reduce the chance of cure.

I may now revert to groups (1) (*a*) and (1) (*b*), in which ordinary lines of treatment are failing to effect cure and consider what can be offered.

There appear to be three reasonable lines of procedure:

(*i.*) The radical operation.
(*ii.*) The Bondy operation.
(*iii.*) Mastoidectomy, followed by continued treatment of the attic, tympanic and tubal disease.

It may here be considered what operative treatment can aim at accomplishing.

It may be taken that any of these manœuvres is capable of removing every scrap of damaged or infected material posterior to a vertical line running through the posterior margin of the prominence of the exterior semi-circular canal. It is the recovery of the structures important for hearing anterior to this line with which debate must concern itself.

When a radical operation has been done and the patient returned to bed, no thoughtful surgeon pictures that he has cured the tympanic disease. He has made the inner tympanic wall freely visible and treatable. He has ended the condition of continuous reinfection by discharge from the mastoid and attic above and from the Eustachian tube in front. He has removed the functionless, because broken, ossicular chain. He has plucked off tympanic granulations, removed the outer wall of the hypo-tympanum and the external overhang of the Eustachian orifice and has now ground for confidence that the areas of osteitis on the inner tympanic wall will resolve, because they are rid of handicaps and freely exposed to post-operative local treatment.

In class (*c*), when a Bondy's operation has been carried out, the position is the same. The fact that the discharge was all through a Shrapnell perforation guaranteed that the inner attic and tympanic walls were practically intact, otherwise a lucida perforation must have been present. The bodies of malleus and incus have been exposed for after treatment, in just the same way as the radical operation exposes the inner tympanic wall.

Class (*b*) remains the stumbling block. These people must be given mastoidectomy, as well as tympanic treatment, or radical, but the gamble lies in the state of the attic. The handicap may be removed. The attic and tympanum suffer in acting as a sewer for the mastoid discharge. Reinfection from the Eustachian tube may be ended by improving the nose, throat and naso-pharynx, or in the last resource if we despair of closing the *membrana tympani*, the Eustachian tube may be closed by Yankauer's or Beck's methods. But none of this guarantees recovery of the attic. How are we to arrive at an opinion of the attic state and the integrity of the ossicle chain?

The perforation often permits a view of the vertical process of incus and the incudo-stapedial joint. If not, it is easy and just to enlarge the perforation upward and/or backward to permit this in cases where the whole area is not choked with granulations. When this latter state exists in a case of any standing, I have never found the incudo-stapedial joint intact. Should it be found that this joint is clear, there is still doubt about the incudo-tympanic joint. It has not been my experience to find the horizontal process of the incus dislocated or missing where the incudo-stapedial joint is intact, but I believe that it has been the experience of others. How are we to determine this and, even more important, the recoverability of the bodies of the malleus and incus?

Hearing tests will not help. The reduction of hearing from an attic choked with pasty pus and granulations, but quite capable of resolution, if given a chance, is quite as great as that with the long process of incus destroyed. Manifestly, on our decision as to the recoverability of the attic depends on whether we must do a radical operation or a mastoidectomy, followed by a period of tubo-tympanic treatment and ultimately a radical operation in case of failure. The only real determinant in this, as in every therapeutic problem, must be the surgeon's judgement. He can give his judgement the best chance by a careful balancing of all the available information before operating, but a section of cases must remain in which the final decision is taken during operation, influenced by the pathological state that operation reveals. The factors which will influence him, are the duration and severity of the disease, the tendency of the tympanic structures to improve during treatment, the usefulness of the other ear, the patient's general health, occupation, age and economic and geographic position, as influencing the possibility of prolonged post-operative treatment, of intermittent but skilled care for subsequent years and the possibility of secondary operation should a non-radical operation fail to cure. When on the table the mastoidectomy has been completed, he has to decide whether the handicap he has removed is so gross that resolution is likely in its absence. If he be in grave doubt, he must expose the attic by partial removal of its outer bony wall. The view obtained by enlargement of the aditus to the limits of safety can very rarely be good enough to decide him to proceed and never to enable him to stop with a practical certainty of success. Bondy's method, carried to a point far short of the external atticostomy performed for the cure of the cases with purely Shrapnell perforations, will give the surgeon invaluable data to help his judgement as regards the state of the attic and ossicles. The mastoid being thoroughly cleared, the skin lining of the external auditory canal can be pushed forward or turned out with impunity. The posterior bony canal wall can be taken down to the neighbourhood of the annulus. The outer bony wall of the attic can be reduced to a thin plate and its upper two-thirds removed, to expose the attic and much of the ossicle bodies to vision, without compromising in any degree his power to stop short here to treat as a mastoidectomy pure and simple and to base his prognosis of attic and tympanic recovery on the foundation of all the facts capable of ascertainment.

Before I discuss results obtainable, a few words as to the technique in use.

I no longer leave mastoidectomy wounds open, to be packed from the bottom for many weeks. The chamber is treated in strict accord with Rutherford Morrison's precepts, lightly filled with bismuth-iodoform-paraffin paste and a couple of sutures inserted in the skin.

I always use Thiersch grafts to cover the chambers after radical operation at once, knowing that, with the perfection of antisepsis attained by Rutherford Morrison's methods, together with the long, undisturbed intervals between the dressings, the graft will take everywhere, except over those areas of osteitis where after-treatment is needed. These, having epidermis all round them, will became covered by skin at the earliest moment that resolution of the bony lesion permit, thus giving a minimum development of granulations on the inner tympanic wall, a consequent minimum of thick cicatrix and therefore a maximum freedom and efficiency of the fenestræ. Care is taken that the graft covers the Eustachian orifice, the inner tympanic wall and the facial ridge only, as the mastoid cavity behind should fill up as much as possible.

I lower the facial crest to the limit of safety, cut down the floor of the external auditory canal till there is no outer wall to the hypo-tympanum, rasp out the Eustachian with Alexander's rasps to the limit, entirely removing its external overhang and, if necessary, shave down an over convex anterior wall of the external auditory canal.

I never curette the inner tympanic wall, contenting myself with plucking off granulations, but apply the smallest and sharpest curettes sedulously to the sinus tympani, hypo-tympanum and Eustachian neighbourhood.

Where history of headache or feeling of bone leaves me in any doubt of the possible existence of extra dural abscess, I freely remove tegmen antri and tympani. Healing is faster on dura than on bone and it is surprising how often small extra dural collections of pus and dirty granulations are found.

Lastly, I cut large Panse flaps, freely encroaching on the concha, to enlarge a narrow external auditory meatus, for I feel that treatment, inspection and dressing must be thorough, easy and painless. The dressing of gauze smeared with bismuth-iodoform-paraffin paste is not changed more often than once a week and often only once a fortnight.

Where fistulæ show in the labyrinth capsule, they are not probed or curetted. In cases in which response from static and auditory labyrinth is nil, labyrinthectomy is performed by a modified Neumann method, as used by Ruttin, freely displaying Trautman's triangle, but not carrying the removal of the petrous as far as the internal auditory meatus. This has resulted in perfect cure in every case, except one, to which I shall refer.

We do not feel that operations like Hinsberg's, which fail to display the dura of the middle and posterior fossæ, should be undertaken, except in very rare cases, for every dead labyrinth I have seen has

had an extra-dural abscess, an intra-dural abscess or meningitis of at least low degree.

In cases in which the suppuration of the cochlea is gross, it seems to be debatable whether one should not go further than exposing the last whorl of the cochlea by knocking off the promontory as Neumann does. It would, perhaps, be better, where in doubt, to uncap the cochlea, at least to its second turn, on the lines laid down by George Richards.

The patient I show you had a gross suppurating labyrinth, which had been operated on ten times before she came to our clinic. Her facial nerve had been destroyed and she had extra-dural abscess, with marked meningitis of both posterior and middle fossæ. A Neumann's operation was done, with very wide removal of the petrous right up to the arcuate eminence and when the promontory was struck off, pus dribbled from the cochlea. You will see that there is still a fistulous weep of pus from the neighbourhood of the promontory, undoubtedly maintained by her suppurating cochlea.

It is questionable whether a Richards's operation will not have to be carried out.

Addendum.

Following a suggestion of Dr. Dench, I have further modified the Eustachian closure in the radical operation by cutting a clean wedge of bone from the posterior part of the bony wound and tightly plugging the Eustachian orifice after rasping it out. I have obtained complete success in the five cases in which it has been tried.

CASE I.—G.K. was admitted on August 10, 1917. The first operation on the old suppurating right ear was performed in the country in December, 1916. Nine further retro-auricular operations were carried out before I saw her, the last in April. At this operation the facial nerve was cut and fulminant labyrinthitis, with intense giddiness and vomiting for fourteen days, started. On admission, the labyrinth was dead. Complete compensation to rotation test had occurred. A Neumann operation exposing an extra-dural abscess of both posterior and middle fossæ was performed. This patient is referred to above as showing persistent cochlea weeping of pus. Facial hypoglossal anastomosis was carried out in December, 1917, with already striking improvement. When this patient was presented I had not seen her for many months and Dr. Marks, on examining her, picked out a loose cochlea sequestrum. I felt at the time that the problem might be solved, but on February 10, 1919, the discharge from the cochlear area continued.

CASE II.—Mrs. T., age 53, had had right otorrhœa since scarlet fever in infancy. She came for persistent pain. The whole exterior auditory canal was filled by a polypus from the *pelvis ovalis*. Hearing was nil; the rotation tests are normal. A radical operation was performed on August 20, 1918. She had complete healing on October 14, 1918.

CASE III.—W.M., age 39, had had left otorrhœa for twenty years. The external auditory canal was filled with polypi springing from the dura at the site of the missing *tegmen antri*. There was an extra-dural abscess. A radical operation was performed on August 9, 1918. He was able to hear a shout *ad concham*. Healing was complete on November 21, 1918. Hearing of conversational voice at 2.5 cm. resulted.

These cases may be taken as evidence of the complete absence of thick cicatrix on the inner tympanic wall after treatment with a primary graft and bismuth-iodoform-paraffin paste dressing, even in grossly purulent cases.

CASE IV.—W.H., age 37, had right earache and discharge since May 26, 1918. He was first seen on July 26, 1918. His hearing of conversational voice was at 40 cm.. There was a very large polypus protruding through Shrapnell's membrane. This was snared on August 3, 1918. The discharge and pain persisted until August 23, 1918. Conversational voice was heard at 37.5 cm.. A Bondy operation was performed. Healing was complete on October 18, 1918. Conversational voice at that time was heard at from 85 to 100 cm. and was steadily improving.

A NOTE ON THE VALUE OF OIL OF CHENOPODIUM IN THE TREATMENT OF STRONGYLOIDES INFECTION.[1]

By **H. Hastings Willis, B.Sc., M.B., Ch.M. (Syd.),**
Medical Officer in Charge of Field Unit No. 4, Australian Hookworm Campaign, Ingham, Queensland.

In the course of the work of Unit No. 4 of the Hookworm Campaign in the Lower Burdekin area, it was noted that in several patients treated for hookworm infection who harboured *Strongyloides stercoralis* in addition, the latter infection disappeared after two doses of oil of chenopodium, even though further doses were necessary to rid the patient of the worms for which the treatment had been undertaken. An unusually high incidence of strongyloides infection in a small locality adjacent to Townsville has given an opportunity of testing the efficiency of this drug on a larger scale.

Of 223 persons in this small area who were examined for hookworms, 60 were found to be harbouring strongyloides. This diagnosis was made by finding in the stools larvæ with a definite genital rudiment visible with low power magnification (100), the characteristic so-called double pharynx and a relatively shallow mouth capsule. The last character was regarded as the best criterion in distinguishing between strongyloides and hookworm larvæ, but in the majority of cases it was not necessary to make this rather tedious observation. As a further check on the accuracy of the diagnosis some specimens were kept at room temperature under moist conditions for a number of days, when free-living adults were seen together with their eggs and, in some cases, their filariform larvæ.

Inquiry from the patients or their parents failed to elicit a history of any symptoms which might be referable to this infection. With the exception of one mentally defective child, all were apparently in good health. The treatment consisted of the administration of oil of chenopodium—0.06 mil. for each year of age up to 20 years and 1.5 mils. for adults—given as a single dose on an empty stomach and followed in one hour by a purgative dose of magnesium sulphate. Preliminary purgation was not deemed necessary. Fifty-eight persons were treated. This treatment was repeated after seven days, the same dose being given.

Fourteen days after the second treatment fæcal specimens were collected and examined both by plain smear and by the centrifuge method, but no eggs or larvæ were found. It was surmised that the patients had been cured, but in view of the opinion held by many that this infection is an intractable one and that negative results of examinations after treatment may be due to a suspension of the egg-laying function of the worms, it was decided to make a re-examination later. This was done after four weeks, *i.e.*, six weeks after the administration of the second treat-

[1] The observations on which this report is based, were conducted with the support and under the auspices of the Commonwealth of Australia, the State of Queensland and the International Health Board of the Rockefeller Foundation.

ment; the results were still negative. In view of the possibilities of re-infection after cure, it was felt that further re-examinations could have little value.

Conclusion.

Oil of chenopodium is an efficient vermifuge for *Strongyloides stercoralis*.

Reviews.

A MANUAL OF NEURASTHENIA.

Dr. Geikie Cobb opens his "Manual of Neurasthenia"[1] with excuses for taking up a subject which has received so much attention, but we think all who peruse the work will come to the conclusion that the excuses are unnecessary. Not only has he done his work well, but it is important that we should have a book on neurasthenia which is brought into line with recent advances in the study of the functional neuroses. Moreover, the war has produced a host of sufferers from this disorder, hence it behoves us all to gain acquaintance with the most modern views on diagnosis and treatment.

Of the numerous works on this subject, there are few without personal bias of the authors regarding causation, some giving exclusive preference to the hypothesis of the physical origin, others to the mental origin, so clouding the issue. Now a feature of the present work is that, while the author is firm in his opinions and deliberate in his reasonings, he views the subject from a broad outlook and gives due regard to the opinions of all recognized authorities.

He does good service in drawing attention to the hazy notions which exist concerning the exact meaning of the term neurasthenia. If we follow the term since its introduction by Beard, we will find that it has undergone manifold changes. Thus Beard included among its symptoms all that heterogeneous mass of mental aberrations, including phobias, obsessions and anxiety neuroses, rejected by later writers and brought together by Janet under the name "psychasthenia." The outcome is that the modern conception of neurasthenia places it, not among the psycho-neuroses, but among the neuroses.

It was Clifford Allbutt who wrote that "neurasthenia is no mere hotchpot." With this the author agrees, claiming that neurasthenia is a definite and separate clinical disorder and that the clinical signs and symptoms are so constantly associated that they form as certain a correlate as those of any other well-recognized disease. This point of view he adheres to throughout. There is no needless and cumbersome division of neurasthenia into many parcels. If the symptoms are all dependent upon a central lesion, why should we speak of sexual or spinal or any other kind of neurasthenia? There is assuredly only one nervous exhaustion, just as there is only one central nervous system; it merely happens that there are degrees of fatigue and different parts of the nervous system, therefore necessarily there are wide variations in results. This brings us to the author's description of neurasthenia as "a condition of nervous exhaustion, characterized by undue fatigue on slight exertion, both physical or mental, with which are associated symptoms of abnormal functioning, mainly referable to disorders of the vegetative nervous system. The chief symptoms are headache, gastro-intestinal disturbances and subjective sensations of all kinds." Of course in the presence of so much diversity of opinion it is hardly possible to give an adequate definition of this malady, but the lines just quoted serve to indicate the author's idea of its features from the clinical aspect.

The book is divided into two parts, the first devoted to the study of ætiology, symptoms, physical signs and diagnosis; the second to treatment in its different branches. The chapters are well balanced, the matter is carefully arranged and the views of the various schools of thought are all considered and discussed in the light of personal experience. In this discussion there is much originality of thought, well-leavened with common-sense. It is all written in language which it is a pleasure to read. The book is printed in clear type and in every way the publishers deserve credit for their share in its production.

[1] A Manual of Neurasthenia (Nervous Exhaustion), by Ivo Geikie Cobb, M.D., M.R.C.S.; 1920. London: Bailliere, Tindall & Cox; Demy 8vo., pp. 366, Price, 12s. 6d. net.

THE NOTIFICATION OF INFECTIVE DISEASES.

In the *Victoria Government Gazette* of October 6, 1920, are published the "regulations relating to notifiable infectious disease" under the *Health Act, 1919*. These regulations come into effect at once and it is therefore necessary for all practitioners within the State of Victoria to recognize their obligations. The notifiable diseases include anchylostomiasis, bilharziosis, cholera, cerebro-spinal meningitis, diphtheria, leprosy, malaria, plague, poliomyelitis, polio-encephalitis, puerperal fever, scarlet fever, small-pox, tuberculosis, typhus fever, typhoid fever and yellow fever. Regulation 4 is as follows:—

> 4. Every medical practitioner who becomes aware that any person visited or professionally attended by him is suffering from a notifiable infectious disease, or who by *post mortem* examination or otherwise becomes aware that any person has died of a notifiable infectious disease, shall immediately—
>
> (*a*) furnish a written certificate to the Council containing the particulars hereunder prescribed—
>
> (*i.*) Surname and christian name of the patient.
>
> (*ii.*) Age, sex and duration of illness.
>
> (*iii.*) Nature of the disease.
>
> (*iv.*) Full address of patient; and
>
> (*b*) inform the head of the household or the occupier of the premises and any person nursing or in immediate attendance on the patient of the infectious nature of the disease and the precautions to be taken to prevent its conveyance to others.

The fees are for notification by medical practitioners of cases in private practice 1s. 6d. each; for notification of cases in hospitals or public institutions 1s. each. No fees will be paid by the Department unless the notification in the prescribed form be sent as soon as the diagnosis is made.

On the receipt of a notification, the council shall instruct the medical officer of health or some other person to visit the house and to make such inquiries as are necessary to enable the council to prevent the spread of the infection and to carry out any other duty imposed on it. When a patient suffering from a notifiable disease moves from one municipal district to another, the council of the first district, on becoming aware of the fact, is required to notify the council of the second district of all particulars relating to the patient. The council has also the duty of ascertaining whether any inmate of the house in which a patient suffering from a notifiable disease resides, attends any school. If any inmate attends a school, the council has to inform the head teacher or person in charge of the school of the occurrence of the infection. The occupier of the house is also required to inform the head teacher or person in charge of the school.

Every council is required to furnish to the Commission returns each week of notifications received from medical practitioners. These returns must contain in addition to the information contained in the original notification, details concerning the occupation of the patient, the place of occupation or of the school attended, the source of the milk supply and the duration of the illness.

When a person suffering from a notifiable disease removes from a house, the occupier of this house is required to notify the council immediately after the removal of the fact and to provide certain information concerning the person, including the address to which he has moved.

Every registrar of deaths is required to report to the council of his district and to the Commission the fact of a death from a notifiable disease, together with certain information concerning the deceased person and the cause of death. For these reports the registrar is to receive one shilling for each death reported. The penalty for failing to comply with the provisions of the regulations or for neglect or disobedience is a sum not exceeding twenty pounds and in the case of a continuing offence a further sum of not more than five pounds each day.

The Medical Journal of Australia.

SATURDAY, OCTOBER 16, 1920.

Postponing an Essential Reform.

The representatives of the Faculties of Medicine of the Australasian Universities were given an opportunity of discussing many problems of immediate importance as they passed through Sydney on their way home from the Australasian Medical Congress. Every medical educationalist recognizes that a readjustment of the scheme becomes necessary from time to time. Progress in medical science is continuous, while the adaptation of the curriculum to the altered state of medical knowledge cannot be other than intermittent. It is not enough to modify lectures and classes as fresh discoveries and new theories replace the older teaching. Additional subjects are claiming a place in the course and the short term of five years has become over-crowded, while the older programme still holds sway. We have given much attention to this matter in these columns during the past months and have endeavoured to establish certain guiding principles on which a reformed curriculum could be planned with advantage to both teachers and students. Many members of the medical profession regard with considerable alarm the rapid increase in the number of students entering the medical schools. Large classes are difficult to handle and individual teaching becomes impracticable, unless the teaching staff is increased in proportion. This growth of the schools renders the problem of reform in Australasia more difficult than it is in the older teaching centres of Europe. Another peculiarity that has to be taken into account, is the different quality of the general schooling in the Commonwealth as compared with that obtaining in the United Kingdom. We are apt to forget that the technical training of the student is not the alpha and omega of the problem. A medical practitioner needs to possess qualities that cannot be taught in the public schools and in the universities. Without the traditional refinement of feeling, good address and self-abnegation, the medical practitioner becomes a tradesman; and then, what is to become of the dignity of the medical profession? Overcrowding is serious only when it involves a fierce struggle for a good living, when time-honoured ethical principles are ignored and when the community is served by casual, half educated and selfish craftsmen. It would seem as if the medical career were very attractive to persons of varying antecedents and propensities. The more democratic the country, the greater are the difficulties confronting the medical schools.

At the conference consideration was given to the preliminary school education required for boys and girls about to enter the medical school. We are in entire agreement with the opinion expressed that no attempt should be made to provide a special school education as a preliminary to medical education. A medical practitioner should be able to write and speak his own language correctly. A little infusion of the artistic element should be imbued, since it is not too much to expect that a well-educated man should be able to convey his thoughts in pleasant sounding sentences. A sound training in the classical languages is so excellent for the development of the mental faculties that its retention appears to us to be essential. Mathematics, from elementary arithmetic to the advanced study of the calculi, add to the stock of knowledge requisite for every boy or girl aspiring to membership of a learned profession. Similarly, at least two modern languages are necessary accomplishments for a practitioner of medicine. Not only is a knowledge of French and German essential to enable the practitioner to follow progress in science, but the ability to read and enjoy *les belles lettres* of other countries adds breadth and depth to the mental outlook.

Sir Joseph Verco records that the student in Adelaide has hitherto learned "physics, chemistry and biology" at school before entering the medical school and that this arrangement has not been altogether satisfactory. If the schools teachers and the members of the medical faulties were to confer on this and a few other matters, the results might be improved. There is no reason why the elements of chemistry and physics should not be taught at school. The student should arrive at the medical school equipped with a knowledge of the general principles

of inorganic chemistry and perhaps with a smattering of organic as well. He should have some acquaintance with the physical sciences and should be prepared to continue this study in its relation to medical problems. Biology is not, as a rule, well taught at a public school.

The second resolution passed at the conference savours of an inability to attack an essential problem. By declaring that the first year should be devoted exclusively to the study of the preliminary sciences, the representatives of the faculties reveal a disinclination to recognize that modern medicine is merely a special form of chemistry, physics and biology. Everything in connexion with health and disease has to be discussed in terms of these three fundamental sciences. The use of the word preliminary indicates a failure to appreciate this truth. If this principle were admitted, the re-casting of the curriculum in correspondence with the modern conceptions of ætiology and pathology would be much easier of accomplishment. We hold very strongly that the recognition of this principle and its application to practice by spreading the study of the fundamental sciences throughout the whole of the curriculum are urgent necessities. Whether the course be extended to six years or not is a matter of detail. A prolongation has many advantages, although we have shown in a previous issue of this *Journal* that the full curriculum can be completed within five years, provided that the systematic lecture be reduced to a minimum. If this form of mass teaching could be banished altogether, it would be a material gain. The increased cost of individual and practical instruction would be counterbalanced by the increased efficiency of the teaching. The main difficulties cannot be met by adding a year to the course, nor by dealing generally with the subjects to be placed in the first year. There must be more enterprise, more leaning toward reform. Patching up is the usual expedient of the reactionary who is unwilling to relinquish the customs and methods among which he has grown old. It is far better to start afresh, when it is found that existing methods have outlived their purpose. Otherwise there may be a risk of failure to provide a modern education for our medical students.

BASAL METABOLISM AND ITS SIGNIFICANCE.

The public is becoming interested in the caloric value of food and in the requirements of individuals under varying conditions of life as regards the quality and quantity of food. Much is being written and spoken of the caloric needs of men engaged in hard manual labour and some of the estimates have been used as a basis for arriving at a minimum living wage. Those who would arrive at a practical solution of these important problems, are oblivious of the fact that the scientific foundation of the calculations are insecure. It is dangerous to apply incomplete knowledge of imperfectly understood processes to practical problems. It is still more unpardonable to prostitute physiological science by pretending to find a solution of the difficulties to coincide with political programmes. Information has been gathered concerning the aggregate weight of meat gained from the official slaughter yards. Statisticians have records of the quantities of certain food stuffs that find their way into the open market. From this inadequate fund of information, endeavours have been made to ascertain the amount of food consumed on an average per individual in the whole community. The errors entailed by the neglect of the private slaughter yards, by the ignoring of the eggs, vegetables, fruits and other articles of diet raised by the consumer, by the varying quantity of waste, varying at times according to the price of food and at times to presence or absence of facilities for keeping perishable articles during warm weather, are incalculable. But notwithstanding these unestimated errors, the political dietician is prepared to go a step further and to multiply his inaccuracies by calculating from these unreliable figures the caloric value of the diets. He is not concerned with the fact that the caloric value of Australian articles of diet has not been determined and that there is every reason to assume that the arbitrary application of European or American values to our foods involves a further error of unknown magnitude.

Before a scientific diet can be prescribed for a community, it is necessary to have accurate observations carried out on a very large number of men performing a standardized amount of work. In the next place, it is essential to know exactly how much of the food ingested is oxidized and how much is needed to maintain the average man of a standard weight performing a maximum amount of work at a constant weight. In order to gain a clear conception of the problems awaiting solution, it is necessary to recognize that the body temperature is maintained almost exclusively by the heat liberated from the combustion of food. Lavoisier showed one hundred and forty years ago that the oxygen carried in the blood to the tissues and organs was required for this combustion and that the heat produced in the process was used for the maintenance of the body temperature. Rubner first worked out the amount of heat produced by the combustion of each gramme of protein, of carbohydrate and of fat. He measured the amount of nitrogen excreted in the urine and fæces and the quantity of carbon dioxide thrown out in the expired air. From these figures he calculated the quantity

of protein, fat and carbo-hydrate oxidized and the heat units liberated by this combustion. He further measured the amount of heat produced during a given period of time by an animal ingesting weighed quantities of chemically standardized food. The earliest calorimeters were constructed with the view to ascertain the amount of carbon dioxide expired. Atwater and Rosa found that more information was needed in order to determine the minimal requirements of animals or men at complete rest in order to keep the body at a constant weight. The calorimeters as constructed by Atwater, Regnault and Hagemann are capable of determining the basal metabolism by measurements of the amount of heat produced and by measurements of the amount of oxygen used up and of carbonic acid generated in the combustion of a given diet. These complicated apparatus were employed as refinements and controls to indirect measurements of the basal metabolism from the oxygen consumption and the carbon dioxide output. It soon became apparent that the basal metabolism varied in different individuals. Du Bois showed that it was not the same in women as in men; that thin people produced more heat than fat people per unit of body weight; that in old age the production of heat was slower and less extensive than in youth. Moreover, it must be remembered that the basal metabolism is the tissue change, the liberation of energy, kept at the lowest level compatible with the life of the body cells. With every voluntary movement, with many involuntary contractions of muscles, with the concomitants of concentrated mental effort an additional amount of heat is produced. In these circumstances an additional amount of fuel is required to provide this heat. If the fuel does not take the form of food ingested, the tissues will be burned up and loss of weight will result. Rubner not only demonstrated that the heat production of the body corresponded with the oxygen consumed, but also showed that the rate of metabolism bore a definite ratio to the extent of the surface of the body. Du Bois endeavoured to standardize the heat production for the average person per square metre of body surface. The measurement of the surface is calculated by means of a formula in which the weight and height are variable quantities. For men the surface figure is multiplied by 39.7 and for women by 36.9. This is said to apply to persons between the ages of twenty and fifty years. Further research has demonstrated that other factors exert an influence on the basal metabolism and on the metabolic rate of an individual performing varying degrees of work. A person accustomed to a healthy, outdoor, athletic life produces a larger amount of heat during a period of complete rest than does a person whose habits are sedentary. Professor Dreyer has shown that there is a distinct relationship between the basal metabolism, the area of body surface, the body weight, the length of trunk and the circumference of the chest. The formulæ which he has devised, are more complicated than those of Du Bois. The fact that fresh factors have to be taken into consideration every now and again would appear to indicate that our present methods of standardizing the basal metabolism of an average individual is not devoid of error. These calculations are, no doubt, useful for the purpose of estimating an alteration of the vital capacity in pathological conditions such as pulmonary tuberculosis. We have still to learn the limits of variation from the average figures that may be regarded as normal. Until more definite evidence is available concerning the range of the basal metabolism of individuals in good health, it would be useless to endeavour to set up standards of total metabolism applicable for the average individual. Rough measurements may be useful in indicating whether any given person is covering his needs with a measured diet or whether the food ingested provides an excessive amount of heat units. Too much reliance, however, should not be placed on calculations which are not scientifically accurate.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on October 6, 1920.

Professor Holme and Assistant-Professor Vonwiller were appointed representatives of the Senate on the Board of Directors of the University Union for a period of one year; Dr. Marjory Little and Miss Irwin Smith were appointed similarly on the Board of Directors of the Women's Union.

Dr. G. A. Brookes was appointed an Honorary Demonstrator in Anatomy.

A letter was received from the Minister of Public Health, in continuation of previous correspondence on the subject of the establishment of a Chair of Psychiatry in the University. The letter contained certain suggestions, including that of the appointment of a full professor, whose duties would be carried out partly under the instruction of the Government and partly at the University. It was resolved that the proposal made by the Minister of Public Health in the Under Secretary's letter of September 27, 1920, for the establishment of a Chair of Psychiatry, be adopted, the University providing the sum required to make up the salary of the full professorship. It was further referred to a committee to consult with representatives of the Government in regard to the terms of appointment to the chair and to the method of appointment.

A report was received from a committee appointed to make recommendations as to the steps to be taken to fill the lectureship in entomology recently established. The following resolutions recommended by the committee were adopted:—

(1) That advertisements be issued in Australasia and in Great Britain inviting applications for the lectureship.

(2) That the salary be at the rate of £600 per annum, with annual increments of £40 to £700.

(3) That the lecturer be attached to the Department of Zoology and that he be required to share in the teaching of students of agriculture, veterinary science and other departments.

(4) That a committee of advice be appointed in London to consider the applications and to transmit to the University the names of the three candidates whom they consider to be most suitable for the appointment, together with their testimonials and a report upon their qualifications; and that the Agent-General for New South Wales be requested to act as chairman and convener of that committee and to receive the applications.

(5) That local applicants be invited to send their applications direct to the University or to the Agent-General for New South Wales in London, or to both.

On the motion of Professor Anderson, it was resolved that a committee be appointed to consider the future relations of the Departments of Latin and Greek, such committee to consist of the Chancellor, the Vice-Chancellor, the Warden, Judge Backhouse, Mr. Leverrier, Mr. Board, Mr. Piddington, Mr. Braddon, Professor MacCallum, Professor Woodhouse, Professor David, Professor Butler and the mover.

Abstracts from Current Medical Literature.

DERMATOLOGY.

(113) Seborrhœic Dermatitis and Psoriasis.

Moses Scholtz (*California State Med. Journ.*, May, 1920) considers the border-line types of seborrhœic dermatitis and psoriasis, instancing a number of cases in which the two conditions approach one another very closely. He states that pathology, ætiology, morphology, anatomical structure and clinical symptomology have been insufficient factors taken individually as a sole guiding principle of classification. The most shifting and variable among these factors is morphology. For this reason the study of border-line dermatoses assumes more than passing interest. He considers the study of border-line dermatoses should be utilized for a broader and more important purpose. New aspects and facts of the clinical and pathological relationship should be considered so that new bases for a rational and comprehensive classification may be prepared. Each of the instances recorded could have been taken at one time for psoriasis, at another for seborrhœic dermatitis, according to the predominating type of eruption at certain periods. At all times, however, patches could be found presenting the combined features of both conditions. Interpretation of these cases can be attempted along three different lines, according to him. (*i.*) It may be a case of one of two pathological and clinical entities, with morphological variations so marked as to simulate the clinical appearance of the other; or (*ii.*) it may be a case of pathological transmutation where true psoriasis developes from the lesions of seborrhœic dermatitis and *vice versa*; or (*iii.*) it may be a case of the co-existence of both conditions with mutual encroachment and overlapping of lesions. These three possibilities represent the dualistic view that psoriasis and seborrhœic dermatitis pathologically and clinically are two distinct entities. The author states that it is surprising how little attention is given in the recent literature to this group of cases. This fact might lead to the belief that this matter was a definitely settled and closed chapter in dermatology. The perusal of the older literature, however, reveals a considerable confusion and diversity of views both as to psoriasis and seborrhœic dermatitis and as to their clinical relationships. Sutton held the view that psoriasis was caused by a parasite. Pusey, on the other hand, stated that the majority of authorities regarded the parasitic nature of psoriasis improbable. Sabouraud included under the terms of seborrhoids the scurfy streptococcal lesion, *pityriasis rosea*, psoriasis, parapsoriasis, etc.. He distinguished histo-pathologically between psoriasis and seborrhœic dermatitis. The clinical behaviour of psoriasis and seborrhœa is so different as to refute the pathogenetic identity even more emphatically than the histo-pathological difference. Moses Scholtz considers psoriasis and seborrhœic dermatitis as distinct and independent. His interpretation of the reported cases of border-line types is based on his belief that psoriasis is constitutionally non-parasitic and that seborrhœic dermatitis is a local and parasitic dermatosis. He dismisses the suggestion of border-line cases being one of the two clinical entities with unusually marked variations on the ground that in each of the reported cases a clinical picture of double condition was present. The second possibility of pathological transmutation does not agree with the observation that it is the patches of psoriasis in their typical situation which show the mixture of seborrhœic features and not the seborrhœic lesions that take on psoriatic aspect. Scholtz is inclined to accept the third hypothesis of the co-existence of both conditions with a mutual overlapping. The mutual character of the overlapping, however, is only apparent and particularly so on the scalp. On the rest of the body clinical evidence readily points to the fact that the seborrhœa engrafts on the psoriatic patches and not the psoriasis on seborrhœa. The incidence of active or latent seborrhœa in psoriasis is not recorded, but it is likely to be rather common, as the inflamed and infiltrated patches of psoriasis present a favourable soil for seborrhœic contagium.

(114) The Histogenesis of Molluscum Contagiosum.

Lyle B. Kingery (*Arch. of Dermat. and Syphil.*, August, 1920) detailed a series of experiments directed towards a demonstration of the ætiological agent of *molluscum contagiosum*. Working with Udo Wile he showed that the lesions of this disease could be produced experimentally from the sterile filtrate of molluscum lesions, thereby justifying their conclusion that *molluscum contagiosum* was caused by a filterable virus. The technique of these experiments carried out on themselves and their assistants was comparatively simple. The lesions were examined histologically after a developmental period of eight weeks. Those examined presented the unmistakable picture of the disease, including the so-called molluscum bodies. The subjects of the experiments were under daily observation and histological study was undertaken at short intervals during the entire evolution of the lesions. The material thus studied offered an unusual opportunity for the investigation of lesions whose histogenesis had been a debated question since the time of Bateman's original description of the disease. Some authorities hold that the lesions of this disease are related to the pilo-sebaceous apparatus. Other equally reputable investigators claim that the lesions are not related either to the follicles or the sebaceous glands, but are due to pathological changes concerning only the rete layer of the epidermis. Similar differences of opinion have arisen through attempts to explain the derivation and origin of the so-called molluscum bodies. The author stated that certain cases presented a pathology which exactly limits itself to the pilo-sebaceous apparatus. No glandular structures were detected in the section studied. He called attention to the fact that embryologically the surface epithelium, the hair follicle and the sebaceous gland and duct had a common origin. The structures were therefore potentially similar. The same causative factor may result in changes pathologically similar whether it be implanted in one place or the other. The conclusions of the author are as follows: (*i.*) The experimental lesions of *molluscum contagiosum* are limited to pilo-sebaceous epithelium. (*ii.*) An abundance of clinical and pathological evidence favours the existence of the analogue of *molluscum contagiosum* in fowls. (*iii.*) An absence of pilo-sebaceous epithelium in the combs and feet of fowls and pigeons where lesions of *molluscum epitheliale* often occur, justifies the conclusion that the lesions of this disease can develope independently of pilo-sebaceous structures. (*iv.*) Presumptive evidence points to the identity of *molluscum contagiosum* in man and *molluscum epitheliale* in the lower animals. Final proof of the development of *molluscum contagiosum* from the surface epithelium therefore must depend on the establishment of the identity of these two conditions. This identity will be proved only by the successful inoculation of *molluscum contagiosum* into fowls and of *molluscum epitheliale* into human subjects.

(115) The Treatment of Keloids.

George Pfahler (*Arch. of Derm. and Syphil.*, August, 1920) considers the treatment of keloids by Röntgen rays or radium combined with excision. He states that as far as it is known Röntgen rays and radium are the only two agents which will arrest the disease or cause it to disappear. If these agents are used early when the scar begins to hypertrophy, there will probably be no need to employ excision. It is because of the frequent neglect of hypertrophy or growing scars that it is necessary to call attention to these methods of treatment. He states if the general practitioner, the surgeon and the dermatologist were alert, keloids would be almost eliminated from the field of medicine. The patient usually seeks relief because of deformity or for cosmetic reasons. Occasionally pain is a prominent symptom and brings the patient for treatment. Sometimes actual mechanical obstruction is caused by the keloids, as when they interfere with the wearing of shoes. The aim of radio-therapy should be to produce a progressive atrophy without erythema or destructive effect on the skin or overlying epithelium. In mild types approximately eight-tenths of an erythema dose can be given. This can be repeated after three or four weeks. In thicker and older cases it is desirable to obtain a cross-firing effect. He advocates the combination of excision

with X-ray or radium therapy for large lesions. Treating a very large keloid by radiation alone means so much radiation that there is danger of degeneration or ulceration with secondary carcinoma formation. He therefore regards it as advisable to excise the keloid and then to treat it by radiation.

BIOLOGICAL CHEMISTRY.

(116) Fruit as a Source of Water-Soluble Vitamine.

T. B. Osborne and L. B. Mendel have examined some of the commoner fruits for water-soluble vitamine (*Journ. Biolog. Chemistry*, July, 1920). Despite the fact that edible fruits enter largely into the dietary of man in nearly every part of the world, they have hitherto scarcely received serious consideration at the hands of scientific investigators. Fruit has been considered to be of importance as an article of diet because of the laxative effects and because it contains valuable mineral salts. In so far as the content of inorganic constituents is concerned, it must be noted that the edible portions of the fruits and the quantities in which they are customarily eaten in general, furnish comparatively little of those elements, notably calcium and phosphorus, which alone deserve more serious attention in the selection of a dietary. It has long been appreciated that some of the fruits have a potency in preventing the onset of scurvy under the conditions now known to permit its appearance. Since the demonstration that this malady is to be classed with the deficiency diseases, the rôle of fruit as antiscorbutics has been widely investigated. The fresh juices of the edible portions of the orange, lemon and grape fruit are shown by the authors to contain water-soluble vitamine. Their potency in this respect is quite similar to that of comparable volumes of cow's milk. A sample of grape juice tested was less potent than equal volumes of the fruit juices just mentioned. The edible portions of apples and pears furnish some water-soluble vitamine; the quantity of these fruits necessary to supply this dietary is relatively very large, so that from a comparative point of view they cannot be regarded as rich in this factor. Prunes are apparently richer in this water-soluble vitamine. From preliminary experiments it seems doubtful whether the juices of the lemon or grape fruit contain more than traces, if any, of the fat-soluble vitamine. Orange juice seems to contain some of this substance. The experiments with fruits place the dietary value of these foods, hitherto recommended because of their salt content, their laxative properties or their antiscorbutic potency, in a new light as sources of water-soluble vitamine.

(117) Physiological Radio-Activity.

H. Zwaardemaker has studied the action of potassium salts in the body from the point of view of their radio-activity (*Journ. Physiology*, February, 1920). Potassium is the only member of the radio-active group of elements found in any quantity in the body. Although the potassium is widely diffused throughout the body, it does not follow that its radio-activity is biologically without influence. Every atom is dispersing β particles on all sides. Materially this is of little significance, but energetically the radiation is of importance. When a frog's heart is perfused with ordinary Ringer's solution, it will keep beating for hours. When, however, the potassium is left out, it is reduced on an average in 30 minutes to a standstill. In all such cases the heart will resume its beats if the potassium be again added to the circulating fluid. Zwaardemaker inquired as to whether the effect of the potassium could be due to its radio-activity. He found that when an æquiradio-active quantum of any of the radio-active elements—uranium, thorium, radium, rubidium, ionium, etc.—is added to a potassium-free Ringer's solution, the beat of the frog's heart is sustained for an indefinite time. It matters little whether the substance emits α or β rays, provided other conditions are well chosen, *e.g.*, the proper amount of calcium. When applied simultaneously the substances emitting α rays and those emitting β rays are reciprocally antagonistic. A free radio-active radiation can take the place of potassium when previously the potassium is omitted from the circulation. Thus when mesothorium was placed a short distance from a heart perfused with a potassium-free fluid, the pulsations invariably returned. Removal of the mesothorium caused a standstill, while pulsation recommenced when the mesothorium was again approached. There is also an optimum for all these radio-active substances, including potassium, beyond which the action does not increase any more; if the amount is much beyond this, toxic effects are produced.

(118) The Antiscorbutic Properties of Raw Beef.

There is considerable support for the view that there is a third "food hormone" which can be placed in the list of substances called vitamines, *viz.*, antiscorbutic vitamine or, as Drummond calls it, "water soluble C." Dutcher, Pierson and Biester have investigated the value of raw beef as a source of this antiscorbutic vitamine (*Journ. of Biol. Chemistry*, June, 1920). Raw meat and meat juice have long been considered to be valuable antiscorbutics, but proper scientific evidence for this view was not available. The authors used guinea pigs for the experiments, feeding them on oats and a small quantity of autoclaved milk, together with beef extract or raw chopped beef. When oats, water and an amount of milk sufficient to improve the diet, but insufficient to prevent scurvy, were given, the animals developed scurvy and died. When water extracts of raw lean beef were fed, representing 5, 10, 15 and 20 grammes of raw beef, no differences could be noted in the time of onset of scurvy or in the length of life of the animals employed in the experiments. Orange juice, added to the basal diet, prevented scurvy, both in the presence and in the absence of meat extract. The excellent condition of the animals on the orange juice-beef extract diet shows conclusively that the poor condition of the animals on the beef extract diet was due to the absence of the antiscorbutic vitamine, rather than to any deleterious property of the beef extract.

(119) Estimation of Methæmoglobin and Hæmoglobin in Blood.

W. S. McElroy has devised a simple and accurate quantitative method for the estimation of methæmoglobin in the blood (*Journ. of Biol. Chemistry*, June, 1920). The necessity for such determinations arises in cases of severe methæmoglobinæmia, when the amount of methæmoglobin in the blood is of value in determining the availability of certain therapeutic procedures, such as transfusion. The method is based on the fact that while oxygen is liberated from hæmoglobin by potassium ferricyanide, it is not liberated from methæmoglobin even *in vacuo*. The total hæmoglobin (hæmoglobin + methæmoglobin) is determined colorimetrically as methæmoglobin, potassium ferricyanide being used to convert the hæmoglobin into methæmoglobin. The oxygen capacity is determined by Van Slyke's method, from which is calculated the hæmoglobin only. The difference between the two results is the amount of methæmoglobin.

(120) The Reaction and Carbon Dioxide Carrying Power of the Blood.

T. R. Parsons has investigated the reaction and carbon dioxide carrying power of the blood from a mathematical point of view (*Journ. Physiology*, February, 1920). The changes of hydrogen-ion concentration in blood produced by changes of carbon dioxide tension are such as occur in a system composed of carbonic acid and one other weak acid of constant strength with a fixed amount of sodium distributed between them. The second weak acid which shares with carbonic acid the available sodium of the blood, is mainly if not entirely hæmoglobin, for the effect of oxygenation on the reaction of the blood can be explained in terms of an increase in the strength of this second weak acid. It is considered by Parsons that the concentration of sodium bicarbonate in the blood increases with increase of CO_2 tension, the CO_2 combining with sodium derived from sodium salts of proteins, so that the dissociable CO_2, *i.e.*, that which escapes at the lungs, is wholly in the form of sodium bicarbonate. It may be said that the buffer value of blood is equal to that of a bicarbonate solution, not of constant, but of gradually increasing strength and that since the proteins have supplied the sodium necessary for the formation of this bicarbonate, they also share to that extent in producing the buffer effect.

Medical Societies.

MELBOURNE HOSPITAL CLINICAL SOCIETY.

A meeting of the Melbourne Hospital Clinical Society was held at the Melbourne Hospital on September 24, 1920, the President, Mr. Basil Kilvington, in the chair.

Mr. B. T. Zwar presented a man, aged 46, who had sought treatment for an epithelioma of six months' duration, situated at the angle of the mouth on the left side. On December 12, 1919, Mr. Zwar had removed a V-shaped portion, including the growth, and on January 21, 1920, carried out the dissection of the corresponding lymphatic glands. Early in March a small recurrence appeared along the line of the scar of the first operation and as the patient was averse to further operation and as the growth, which was quite superficial, seemed favourable for radium therapy, treatment by radium was instituted. On April 19 a 48-hour application of four parcels of radium, totalling 70 mgm., was made; on June 9 and on July 21 35 mgm. of radium were applied for a similar period.

X-ray treatment was undertaken on August 20 and 23, but as there was no apparent benefit from these measures, operative removal of the recurrent epithelioma was performed on August 27. Although the sutures were not disturbed for fifteen days, it was found that there was no attempt at healing in the incision.

Mr. Zwar related a previous experience in which he had excised an ulcer some months after the last application of radium. In that case also, although there was no undue tension on the sutures, healing by first intention failed and the subsequent repair was a very delayed process. He thought it well to direct attention to the impaired vitality in tissues exposed to the action of radium, as evidenced by their defective healing powers in subsequent operative measures.

With reference to the operative technique for the removal of the cervical lymphatic glands in cases such as he had presented, Mr. Zwar expressed himself as firmly of opinion that the surgeon should either divide the sterno-mastoid muscle or remove it completely. Only by carrying this out in the manner described by Sir Herbert Maitland could a clean removal of the upper "packet" of deep cervical glands be insured. The procedure indicated also gave the best access to the glands along the spinal accessory nerve, which were always involved along with those in the neighbourhood of the jugular sheath. No loss of time was incurred in dealing with the sterno-mastoid in this manner and the operation was rendered very much easier.

Mr. Victor Hurley, C.M.G., said that he could confirm Mr. Zwar's observations relating to the deleterious effects of radium and X-rays on healing. As regards removal of the sterno-mastoid, Mr. Hurley said that, if occasion arose, he would not hesitate to remove it; certainly, as far as function was concerned, there was no obstacle to the procedure. Sir Herbert Maitland had exhibited patients in whom the sterno-mastoid muscles of both sides had been removed without loss of function.

Mr. Basil Kilvington had noted that for a considerable distance beyond the margins of an irradiated ulcer the skin had very little healing power. He did not favour the use of X-rays and radium for malignant ulceration of the face, except in those cases where the situation of the process, as on the nose or near the eyes, led to great deformity after operation. The effect of X-rays and radium was too frequently to promote superficial healing, while stimulating deeper infiltration and glandular penetration.

Mr. Basil Kilvington exhibited the late result of operation for Erb's palsy in a boy, aged 6 years. He had excised the scar tissue from the cord of the brachial plexus, formed by the union of the fifth and sixth cervical nerves, when the boy was three months old. There was now considerable power in the deltoid and biceps muscles and moderate development of the supra- and infra-spinati. The triceps action was feeble; this muscle, however, was innervated from the seventh and eighth cervical and first dorsal segments; its recovery was not so important as that of the biceps. The action of the supra-scapular muscles was not very good; pronation and supination were poor. The whole arm on the affected side was of diminished growth and the scapula was small in comparison with that of the sound side.

Mr. Victor Hurley inquired of Mr. Kilvington whether, in such a case as he had shown, he would consider it advisable to wait for a period in order to see if any degree of recovery ensued. Mr. Hurley quoted experiences of war injuries of the brachial plexus in which a surprising degree of recovery sometimes followed relaxation of the muscles in a deltoid splint.

Mr. Kilvington replied that in severe types of Erb's palsy it was his practice to excise the scar tissue as soon as the infant could stand the operation; with the stretching of the neck during difficult delivery, the nerve trunks were badly torn and frayed out. He thought that operation offered the only chance of obtaining a restoration of function. However, milder cases might be treated expectantly for a time, as Mr. Hurley had suggested.

Mr. Victor Hurley, C.M.G., demonstrated two skiagrams illustrating fracture of the patella, both of which were interesting in that apparently trivial injuries had led to the condition. The clean transverse fracture, without separation of the fragments, shown in the first plate, was at first regarded as a "sprain," contracted during a game of tennis. A few days afterwards the patient further "sprained" his knee while descending stairs. The fracture of the patella, only discernible by X-ray examination, had thus resulted from muscular violence only. In the second plate, the tip of the patella was shown to be torn off as the result of a very slight injury.

Mr. A. S. M. Tymms commented upon the necessity for radiographic examination in cases of "synovitis" which were slow in resolving. The tip of the olecranon process was frequently fractured without separation. The true condition of affairs could not be determined without a Röntgenological examination. Mr. Tymms quoted a recent instance illustrative of these facts that had come under his notice in the out-patient department.

Mr. G. A. Syme was of opinion that all injuries to joints should be subjected to radiographic examination. He recollected a patient whom he had once shown at a clinical meeting of the Victorian Branch of the British Medical Association. Despite the fact that this patient was walking about, an X-ray examination disclosed a vertical fracture of the condyle of the femur underlying the synovitis. Fractures of the patella were probably much more common in knee-joint injuries than had been considered; similar observations were applicable to "sprained" wrists.

Mr. Kilvington remarked that in many patients with head injuries attended by concussion fissured fractures were detected in the skiagram. These fractures frequently led to no complications and were indistinguishable clinically.

Mr. W. A. Hailes, D.S.O., demonstrated an example of *osteitis deformans* in a male patient, aged 70. Pain in the right leg had compelled the old man to seek relief at the out-patient department of the hospital. The typical deformity of *osteitis deformans* was apparent on examination of the right tibia. A radiographic investigation of the bones of the body generally disclosed the characteristic X-ray appearances of this disease in the skull, right tibia and right fibula. Mr. Hailes remarked that the condition was of interest from the points of view of pathology and treatment. There were various suggestions regarding the pathological process: (*i.*) that it was essentially inflammatory, (*ii.*) that it depended on supra-renal deficiency, (*iii.*) that *osteitis deformans* was to be correlated with an excess of lactic acid in the blood, by which solution of calcium salts from the bones was effected, with increased production of bone to counteract the tendency of the bones to bend. None of the theories was satisfactory; the first mentioned might be said to be disproved. In regard to treatment, iodide of potash had been recommended for the pain. It had been claimed that supra-renal cortex controlled the disease. These measures, however, were disappointing.

The view of most authorities was that *osteitis deformans* tended to progress till death, but Mr. Hailes quoted an orthopædic surgeon of experience who had claimed that the condition exhibited a tendency to run its course and then to remain stationary.

Mr. A. S. M. Tymms described another case of *osteitis deformans* in a female patient, aged 47 years, then in the out-

patient department. She complained of nocturnal pain and exhibited bowing of the right tibia. This was the only bone involved and the X-ray appearances were identical with those in the skiagram shown by Mr. Hailes.

Mr. Basil Kilvington commented on the distinctness of the pituitary fossa as an interesting feature of the X-ray photograph of the skull.

Dr. W. Ostermeyer brought forward a male patient, aged 28, whom he regarded as the subject of Hanot's hypertrophic biliary cirrhosis. The history was that for an indefinite period the patient had complained of tenderness in the region of the epigastrium. Ten weeks previously he was taken suddenly ill. A rigor ushered in diarrhœa of four days' duration. The patient had noted that the motions were putty-coloured and that the urine was dark. There was also a considerable amount of pain over the liver.

Improvement ensued to a degree sufficient to enable the man to return to work for a fortnight, at the end of which period he was forced to return to bed. He had wasted a great deal during the ten weeks of illness. Dr. Ostermeyer demonstrated the greatly enlarged liver. He was unable to detect any enlargement of the spleen. He was particularly anxious not to overlook any surgical condition, such as a hydatid cyst or liver abscess, in the diagnosis. X-ray examination had failed to disclose a hydatid cyst and the complement fixation test for hydatid disease carried out by Dr. Fairley did not yield a response. There were 3,700,000 red and 10,000 white blood corpuscles per cubic millimetre. The Wassermann test was applied to the blood serum; no reaction was obtained.

Dr. Ostermeyer said that the whole clinical picture impressed him as that of Hanot's cirrhosis, but in view of the wasting, hepatic abscess and even malignant disease merited consideration.

Mr. Kilvington remarked that in the absence of hydatid disease, liver abscess seemed the only probable surgical condition. No harm would be done with an exploring needle to exclude this condition from the diagnosis.

Dr. R. R. Stawell introduced the case of a man, aged 29, as an instance of *encephalitis lethargica*, in the early stages of which mild clonic spasms occurred. The history was that six weeks previously the patient developed a sore throat and felt "light headed." Four days later there ensued sudden spasm of both arms and hands, followed by restlessness, insomnia, delusions and continued muscular spasms. At that time (August 13, 1920) all the muscles of the body and face were in a state of spasm and tremor. The temperature and pulse were normal, no abnormal neurological signs could be detected and the throat exhibited a general pharyngitis.

The patient was admitted to hospital on August 22 in a state of delirium and great restlessness; he was suffering from hallucinations and spoke to persons whom he imagined to be present; he got out of bed repeatedly, particularly at night time. He complained of headache and of "seeing double." Further examination of the central nervous system failed to elicit evidence of cranial nerve involvement. There was a general and equally distributed exaggeration of the tendon reflexes and a suggestion of neck stiffness and Kernig's sign. Cerebro-spinal fluid was withdrawn by lumbar puncture on August 27; the sample was an apparently normal fluid, exhibiting no increase in globulin or cell content.

Mr. Leonard Mitchell had examined the eyes and had reported that the fundi were normal, but there was some loss of binocular fusion.

The Wassermann test with the patient's serum failed to yield a positive response.

Dr. Stawell indicated that for the first week the patient remained in his restless, muttering, delirious state, with retention of urine. He then passed gradually into the lethargy that had been maintained for the past three weeks. He could usually be roused sufficiently to make some response to questions, although on some days he was more stuporous and passed urine and fæces into bed; on other occasions he would be more alert mentally and would ask for conveniences.

Food had been taken well throughout; when a meal was brought the patient sat up in bed and used a knife and fork with moderate precision. There had been no change in the neurological signs and symptoms, except the appearance of a transitory external strabismus of the left eye at one period. At the present time there was no diplopia.

Dr. Stawell remarked that since the occasion, some fifteen months ago, upon which he had shown a series of cases of *encephalitis lethargica* at a meeting of the Society[1] he had seen between 50 and 60 cases of this condition. He emphasized the characteristic syndrome of headache, diplopia and lethargy of that peculiar type which was pronounced by day and gave place to restlessness and delirium at night. Diagnosis was often very difficult and in the case before them, as in other instances, examination of the cerebro-spinal fluid was of no assistance. It appeared that there were no distinctive features in the cerebro-spinal fluid; such changes as did occur might be associated equally well with conditions other than *encephalitis lethargica*. With reference to prognosis, it could be said that the majority of these patients got well; he would place the mortality at about 20%.

Dr. Stawell was of opinion that liberal feeding was desirable during the illness, which was often prolonged. He confessed to some anxiety about the use of lumbar puncture and unless this measure was essential for diagnosis he would be disposed to interfere as little as possible with the relationships of the cerebro-spinal axis.

Dr. Reginald Webster contributed some remarks which served to illustrate the difficulty attending the diagnosis of *encephalitis lethargica* by examination of the cerebro-spinal fluid. At the Children's Hospital he had on more than one occasion found it difficult to pronounce as between *encephalitis lethargica* and tuberculous meningitis, but it seemed to him that so far as it was possible to formulate any guiding rules, larger quantities of fluid, more definite globulin reaction and higher lymphocyte counts characterized the latter condition.

Dr. N. Hamilton Fairley said that he had recently read an epitomized report covering a very large series of cases of *encephalitis lethargica*. It there appeared that 40% of cases showed a definite lymphocytic response in the cerebro-spinal fluid, but at the same time there was no characteristic finding in the lumbar puncture fluid. It was stated also that the majority of patients exhibited a demonstrable third nerve lesion.

Dr. N. Hamilton Fairley, O.B.E., demonstrated microscopical preparations in which were seen: (*i.*) Anthrax bacilli in smear from malignant pustule. (*ii.*) Anthrax bacilli in section of lymphatic gland. (*iii.*) Anthrax bacilli in section of small intestine.

Dr. Fairley also exhibited specimens of small and large bowel, showing ulceration of the intestine in anthrax.

In some remarks relative to the specimens, Dr. Fairley drew attention to the fact that, owing to the importation of certain foreign shaving brushes, the incidence of anthrax in Australia had risen considerably during recent years.

The patient from whom the specimens were obtained had developed a pustule on the neck within the shaving area three days before his admission to hospital. He became very rapidly ill, with profuse vomiting and diarrhœa; in the space of 36 hours he was reduced to a condition of very great gravity. He died shortly after admission to hospital.

The local lesion corresponded closely in clinical features to the text-book description of malignant pustule, in that there appeared a central necrotic area, surrounded by a ring of vesicles on an hyperæmic base. At the *post mortem* examination, he (Dr. Fairley) had been impressed with the swollen, soft, hæmorrhagic, lymphatic glands in the vicinity of the lesion. The conditions in the abdomen somewhat resembled a severe typhoid infection in that there was much œdema of the mesentery, hæmorrhage and ulceration of the intestine and an advanced œdematous and engorged appearance in the mesenteric glands. On opening the bowel it was seen that the lesions consisted variously of foci of hæmorrhage, pustules and areas of ulceration extended from the duodenum to the rectum.

Further examination resulted in the observation that the glandular and peri-glandular invasion had extended from the local lesion to the pharyngeal wall, which was the site of hæmorrhagic, gelatinous œdema. This exudate, teeming with anthrax bacilli, had apparently been swallowed, with consequent lesions in the intestine. As there was no evi-

[1] *The Medical Journal of Australia*, August 2, 1919, p. 97.

dence of affection of the mucous membrane of the stomach, presumably the hydrochloric acid of the gastric juice had sufficed to inhibit the activity of the anthrax bacilli. However, in the alkaline medium of the small intestine the organisms had flourished abundantly.

Cultures from the lungs, spleen and cervical glands had all yielded profuse growths of *B. anthracis*; an inoculated guinea-pig died in 36 hours.

Dr. Fairley commented on the conditions he had described in the neck as affording evidence of the great invasive powers of the anthrax bacillus. It was an organism that knew no anatomical boundaries. It was not a very far call from these observations to the rational therapy of the disease. Sclavo's serum or other genuine preparation should be promptly administered and before there was any surgical interference. Sclavo's serum had resulted in a fall in the mortality from cutaneous anthrax from 27% to 5%.

Dr. Fairley related an experience in Egypt in which Sclavo's serum had been used with life-saving effect in septicæmic anthrax; a case which, in collaboration with Dr. E. N. Bateman, he has recorded in detail in *The Medical Journal of Australia* of January 10, 1920.

POST-GRADUATE WORK IN MELBOURNE.

At the instigation of the Victorian Branch of the British Medical Association, a permanent committee for post-graduate work was formed a short time ago. The personnel of the committee was published in our issue of June 19, 1920, page 583. This committee has arranged for annual post-graduate courses and has now circularized the syllabus of the first course among medical practitioners in the State of Victoria. Applications for enrolment will be received by the Honorary Secretary, Dr. J. W. Dunbar Hooper, on or before October 30, 1920. The fee for the course is £3 3s.. The syllabus is set out in the following:

Monday, November 8, 1920—
9.30 a.m.—Dr. J. F. Wilkinson: "Dietetics of Gastric Ulcer and Diabetes," at the Melbourne Hospital.
Dr. D. Murray Morton: Surgical Cases, at St. Vincent's Hospital.
Dr. A. V. M. Anderson: "Blood Pressure," at the Alfred Hospital.
11.30 a.m.—Pathological Demonstrations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 p.m.—Dr. A. J. Wood: "Modern Methods of Infant Feeding," at the Children's Hospital.
Dr. G. Horne: "When to Interfere in Obstetric Cases," at the Women's Hospital.
Surgical Operations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 to 6 p.m.—Out-patients at the Women's Hospital.
8 p.m. —Inaugural Lecture by Professor W. A. Osborne: "Instruments of Precision in Diagnosis," at the University.

Tuesday, November 9, 1920—
9.30 a.m.—Mr. F. H. Langlands: Surgical Cases, at the Melbourne Hospital.
Mr. J. S. Buchanan: "Gall-Stones," at the Alfred Hospital.
Dr. L. S. Latham: Clinical Cases in Wards, St. Vincent's Hospital.
11.30 a.m.—Pathological Demonstrations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 p.m.—Dr. W. Kent Hughes: Orthopædic Cases, at the Children's Hospital.
Dr. R. R. Wettenhall: "Common Diseases of the Skin." at the Alfred Hospital.
Operations at the Melbourne and St. Vincent's Hospitals.

Wednesday, November 10, 1920—
9.30 a.m.—Dr. R. R. Stawell: Lecture in Clinical Medicine, at the Melbourne Hospital.
11.30 a.m.—Antenatal Clinic at the Women's Hospital.
2.30 p.m.—Dr. J. H. Anderson: Demonstration in Applied Anatomy, at the School of Anatomy, University of Melbourne.
Dr. W. J. Young: Demonstration in Physiology, at the School of Anatomy, University of Melbourne.
Operations at the Melbourne, Alfred and St. Vincent's Hospitals.
7.30 p.m.—Dr. C. H. Johnson: Demonstration at the Venereal Diseases Clinic, Lonsdale Street, Melbourne.

Thursday, November 11, 1920—
9.30 a.m.—Dr. K. Hiller: "Rheumatoid Arthritis," at the Melbourne Hospital.
Dr. H. Laurie: "Polio-Encephalitis," at the Alfred Hospital.
Mr. H. B. Devine: Surgical Cases, at St. Vincent's Hospital.
1.30 a.m.—Dr. S. S. Argyle: "X-rays," at the Alfred Hospital.
Pathological Demonstrations at the Melbourne and St. Vincent's Hospitals.
2.30 a.m.—Dr. R. H. Morrison: "On Puerperal Sepsis," at the Women's Hospital.
Dr. C. H. Mollison: Demonstration on Pathological Specimens.
Dr. W. S. Ferguson: "On Diarrhœa in Infants," at the Children's Hospital.
3.30 to 6 p.m.—Out-patients at the Women's Hospital.
Operations at the Melbourne and St. Vincent's Hospitals.

Friday, November 12, 1920—
9.30 a.m.—Mr. John Gordon: Surgical Cases, at the Melbourne Hospital.
Mr. Balcombe Quick: "Frequency of Micturition," at the Alfred Hospital.
Dr. Alex. Lewers: "Some Clinical Problems in Medical Wards," at St. Vincent's Hospital.
11.30 a.m.—Pathological Demonstrations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 p.m.—Dr. H. D. Stephens: "On Congenital Deformities," at the Children's Hospital.
Operations at the Melbourne, Alfred and St. Vincent's Hospitals.

Saturday, November 13, 1920—
9.30 a.m.—Dr. N. H. Fairley: "On Hydatid Infections," at the Research Institute.
8 p.m. —Melbourne Medical Association.

Monday, November 15, 1920—
9.30 a.m.—Mr. B. Zwar: "On Difficulties in Diagnosis and Treatment of Appendicitis," at the Melbourne Hospital.
Mr. R. C. Brown: "On Acute Abdomen," at the Alfred Hospital.
Dr. Hume Turnbull: "Diagnosis of Normal and Diseased Heart," at the Melbourne Hospital.
11.30 a.m.—Pathological Demonstrations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 p.m.—Dr. Geo. Horne: "Uterine Hæmorrhage," at the Women's Hospital.
Dr. C. H. Mollison: Demonstration on Pathological Specimens, at the Women's Hospital.
Surgical Operations at the Melbourne, Alfred and St. Vincent's Hospitals.
3.30 to 6 p.m.—Out-patients at the Women's Hospital.

Tuesday, November 16, 1920—
9.30 a.m.—Dr. H. H. Strong: "Diseases of the Blood, with Specimens of Blood Films and X-Ray Plates," at the Melbourne Hospital.
Mr. Julian Smith, at St. Vincent's Hospital.
Dr. J. F. Mackeddie: "Rheumatoid Arthritis," at the Alfred Hospital.

11.30 a.m.—Pathological Demonstrations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 p.m.—Dr. F. V. Scholes, at the Queen Victoria Infectious Diseases Hospital, Fairfield.

Wednesday, November 17, 1920—
9.30 a.m.—Mr. Hamilton Russell: Lecture on "The Acute Surgical Infections of Children," at the Children's Hospital.
11.30 a.m.—Antenatal Clinic at the Women's Hospital.
2.30 p.m.—Dr. W. J. Penfold: "On Production and Use of Pneumococcal Sera," at the Commonwealth Serum Laboratories, Royal Park.
7.30hp.m.—Dr. C. H. Johnson: Demonstration at the Venereal Diseases Clinic, Lonsdale Street, Melbourne.

Thursday, November 18, 1920—
9.30 a.m.—Mr. T. E. L. Lambert: "On Fractures," at the Melbourne Hospital.
Dr. R. R. Stawell: Demonstration on Clinical Cases in the Ward, at the Melbourne Hospital.
Mr. Fay Maclure: "Fractures," at the Alfred Hospital.
11.30 a.m.—Dr. S. S. Argyle: "X-Rays," at the Alfred Hospital.
Pathological Demonstrations at the Melbourne and St. Vincent's Hospitals.
2.30 p.m.—Mr. Rupert Downes: "On Tonsils and Adenoids," at the Children's Hospital.
Dr. Reg. Webster: Demonstration on Pathological Specimens, at the Children's Hospital.
Operations at the Melbourne and St. Vincent's Hospitals.

Friday, November 19, 1920—
9.30 a.m.—Dr. S. V. Sewell: "Some Modern Views in Neurology," at the Melbourne Hospital.
Mr. Gordon Shaw: Demonstration of Cases in Out-Patient Department, St. Vincent's Hospital.
Dr. M. D. Silberberg: Demonstration in Cardiac Cases, at the Alfred Hospital.
11.30 a.m.—Pathological Demonstrations at the Melbourne, Alfred and St. Vincent's Hospitals.
2.30 p.m.—Mr. W. D. Upjohn: "Diseases and Injuries in Neighbourhood of Joints," at the Children's Hospital.
Dr. Cairns Lloyd: Demonstration on Uterine Displacements at the Women's Hospital.
Surgical Operations at the Melbourne, Alfred and St. Vincent's Hospitals.
3.30 to 6 p.m.—Out patients at the Women's Hospital.
8 p.m. —Professor Sir H. B. Allen: Demonstration at the Pathological Museum.

Saturday, November 20, 1920—
9.30 a.m.—Dr. S. W. Patterson: "On Intestinal Infections," at the Research Institute.

If a sufficient number desires to attend work on eye, ear, nose and throat, a special course will be arranged. Members wishing to take out such a course are asked to communicate with the Honorary Secretary, 2 Collins Street, Melbourne.

Special class will shortly be commenced at the University for practitioners desiring to specialize in X-ray work. This class will be under the direction of Professor Laby, to whom applications should be made.

The pathological demonstrations at the Alfred Hospital will be conducted by Dr. A. J. Trinca and at St. Vincent's Hospital by Dr. A. Brennan.

THE TRANSMISSION OF SPECIMENS FOR PATHOLOGICAL EXAMINATION.

In *The Medical Journal of Australia* of August 28, 1920, page 207, the attention of members was directed to the provision of the Postal Department in regard to the express delivery of parcels, as set out in Paragraph 141 in the Post and Telegraph Guide. It was suggested that advantage might be taken of this provision for the purpose of transmitting specimens for bacteriological or pathological examination. We are informed by an anonymous correspondent[1] that on following the advice given, he received official notification that he had rendered himself liable to a penalty of not exceeding £50. The provisions in the Post and Telegraph Guide are as follows:—

46. (1) Applications for registration by the Postmaster-General of laboratories to which bacteriological or pathological specimens may be sent for examination must be made on the prescribed form, copies of which may be obtained from the Deputy Postmaster-General of a State.

(2) Bacteriological or pathological specimens addressed to laboratories registered by the Postmaster-General may be accepted for transmission by registered packet post, under the following conditions, *viz.*:—

(*a*) On the outside of every such packet there must be written or printed the words "Specimen for Bacteriological or Pathological Examination."

(*b*) The liquid or substance forwarded for examination must be enclosed in a receptacle hermetically sealed, which receptacle must itself be placed in a strong wooden or metal case, in such a way that it cannot shift about, and with a sufficient quantity of some absorbent material (such as sawdust or cotton wool) so packed about the receptacle as absolutely to prevent any possible leakage from the packet in the event of damage to the receptacle.

(*c*) The packet must on no account be dropped into a letter-box, or be sent by parcel post. Any packet of the kind found in the parcel post, or any packet of the kind, whether registered or not, found in the post, not packed as directed, shall be deemed to be posted in contravention of the *Post and Telegraph Act, 1901-1916*, and dealt with accordingly.

(3) Any person who sends by post bacteriological or pathological specimens, otherwise than as provided by these Regulations, shall be liable to a penalty not exceedingly fifty pounds.

In order to insure prompt delivery, we would recommend medical practitioners to pack and label the specimens in accordance with Paragraph 46 (2) (*b*), to register the parcel and to invest fourpence as the "express delivery" fee to impress the postal authorities with the importance of immediate and quick transit.

Drs. A. A. Lendon, R. S. Rogers and Gertrude M. Halley have been re-appointed Official Visitors to the Mental Hospitals in South Australia.

It is with regret that we have to report the death on October 1, 1920, at Thargomindah, Queensland, of Dr. Francis Henry Thornton.

Books Received.

AIDS TO OSTEOLOGY, by Philip Turner, B.Sc., M.B., M.S., F.R.C.S., Second Edition; 1920. London: Baillière, Tindall & Cox; Foolscap 8vo., pp. 187. Price, 4s. 6d. net.

PSYCHO-NEUROSES OF WAR AND PEACE: Thesis Approved for the Degree of Doctor of Medicine in the University of London, by Millais Culpin, M.D., F.R.C.S.; 1920. Cambridge: At the University Press: Demy 8vo., pp. 127. Price, 10s. net.

THE X-RAY ATLAS OF THE SYSTEMIC ARTERIES OF THE BODY, by H. C. Orrin, O.B.E., F.R.C.S.; 1920. London: Baillière, Tindall & Cox; Demy 4to., pp. 92, illustrated by 21 plates. Price, 12s. 6d. net.

AN INTRODUCTION TO THE STUDY OF HYPNOTISM, Experimental and Therapeutic, by H. E. Wingfield, M.A., M.D., B.C., Second Edition; 1920. London: Baillière, Tindall & Cox; Crown 8vo., pp. 195.

CLINICAL LECTURES ON ENLARGEMENT OF THE PROSTATE, with a Description of the Author's Operation for Total Enucleation of the Organ, by Sir Peter J. Freyer, K.C.B., M.D., M.Ch., M.A., LL.D., Fifth Edition; 1920. London: Baillière, Tindall & Cox; Demy 8vo., pp. 174. Price, 10s. 6d. net.

INDUSTRIAL COLONIES AND VILLAGE SETTLEMENTS FOR THE CONSUMPTIVE, by Sir German Woodhead, K.B.E., V.D., M.A., M.D., LL.D., and P. C. Varrier-Jones, M.A., M.R.C.S., L.R.C.P., with Preface by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S.; 1920. Cambridge: Syndics of the Cambridge University Press; Demy 8vo., pp. 151. Price, 10s. 6d. net.

[1] This correspondent appears to have transgressed the rules of the Post Office and in his laudable endeavour to hand on his experience to his colleagues, he has transgressed the rules of the press by neglecting to enclose his card or to append his name to his communication. Through inadvertance or otherwise, he has, however, indirectly disclosed his identity.

THE COURSE OF OPERATIVE SURGERY: A Handbook for Practitioners and Students, by Professor Dr. Victor Schmieden and Arthur Turnbull, M.B., Ch.B., with a foreword by Professor Dr. A. Bier, Second Enlarged English Edition; 1920. London: Baillière, Tindall & Cox; Royal 8vo., pp. 349, with 436 illustrations.

PRACTICAL CHEMISTRY, INCLUDING SIMPLE VOLUMETRIC ANALYSIS AND TOXICOLOGY, by P. A. D. Richards, F.I.C., Third Edition; 1920. London: Baillière, Tindall & Cox; Crown 8vo., pp. 149.

EPIDEMIC ENCEPHALITIS (ENCEPHALITIS LETHARGICA), by Frederick Tilney, M.D., Ph.D., and Hubert S. Howe, A.M., M.D.; 1920. New York: Paul B. Hoeber; Demy 8vo., pp. 252. Price, $3.50

BAILLIÈRE'S NURSES' COMPLETE MEDICAL DICTIONARY, Edited by Constance M. Douthwaite, Second Edition; 1920. London: Baillière, Tindall & Cox; Pocket size, pp. 206. Price, 3s. net.

DIAGNOSIS OF BACTERIA AND BLOOD-PARASITES, by E. P. Minnett, M.D., D.P.J., D.T.M. and H., M.R.C.S., L.R.C.P., Third Edition; 1920. London: Baillière, Tindall & Cox; Foolscap 8vo., pp. 94. Price, 4s. 6d. net.

THE DUTIES OF SISTERS IN SMALL HOSPITALS, by Félicie Norton; 1920. London: Baillière, Tindall & Cox; Crown 8vo., pp. 75. Price, 4s. 6d. net.

INTELLIGENCE AND SOCIAL VALUATION: A PRACTICAL METHOD FOR THE DIAGNOSIS OF MENTAL DEFICIENCY AND OTHER FORMS OF SOCIAL INEFFICIENCY, by Richard A. Berry, M.D., and S. D. Porteus, Director of Research Laboratory of Training School at Vineland; 1920. New Jersey: Department of Research, Training School, Vineland; Royal 8vo., pp. 100.

SURGICAL THERAPEUTICS AND OPERATIVE TECHNIQUE, by E. Doyen, English Edition, Prepared by the Author in collaboration with H. Spencer-Browne, M.B., etc., Volume III: Surgery of the Abdomen, Pelvis and Genito-Urinary Organs; 1920. London: Baillière, Tindall & Cox; Large Royal 8vo., pp. 811, with 959 illustrations. Price, 45s. net.

Medical Appointments.

Dr. W. F. Digges La Touche (B.M.A.) has been appointed Junior Resident Medical Officer in the Department of Mental Hospitals of New South Wales.

The appointment as Government Medical Officers of Dr. G. E. Hobson (B.M.A.) at Macksville and of Dr. P. L. A. O'Halloran (B.M.A.) at Carcoar, New South Wales, have been approved.

It is announced that Dr. W. B. Ryan has been appointed for twelve months on probation a Junior Medical Officer to the Hospitals for the Insane in Victoria.

Dr. W. B. Chapman (B.M.A.) has been appointed Acting Government Medical Officer and Acting Medical Officer to the State Children's Department at Townsville, Queensland, during the absence of Dr. E. Humphry (B.M.A.).

Dr. T. S. Greenaway (B.M.A.) has been appointed Medical Officer of the Venereal Clinics and Dispensaries in Brisbane and Medical Officer of the Venereal Isolation Hospital, South Brisbane.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xiv.

Hospital for Sick Children, Brisbane: Resident Medical Superintendent.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Institutes or Medical Dispensaries. Manchester Unity Independent Order of Oddfellows. Ancient Order of Foresters. Hibernian Australian Catholic Benefit Society. Grand United Order of Free Gardeners. Sons of Temperance. Order of St. Andrew. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Oct. 16.—Northern Suburbs Med. Assoc. (N.S.W.).
Oct. 19.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Oct. 20.—West. Aust. Branch, B.M.A..
Oct. 26.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Oct. 27.—Vict. Branch, B.M.A., Council.
Oct. 28.—Q. Branch, B.M.A., Council.
Oct. 28.—S. Aust. Branch, B.M.A..
Oct. 29.—N.S.W. Branch, B.M.A..
Nov. 1 to 10.—Vic. Branch, B.M.A.; nominations of candidates received for election to Council.
Nov. 5.—Q. Branch, B.M.A..
Nov. 9.—Tas. Branch, B.M.A..
Nov. 9.—N.S.W. Branch, B.M.A., Ethics Committee.
Nov. 10.—Vic. Branch, B.M.A..
Nov. 11.—Vic. Branch, B.M.A., Council.
Nov. 11.—Q. Branch, B.M.A., Council.
Nov. 12.—N.S.W. Branch, B.M.A., Clinical.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: B. 4635.)